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AN INVESTIGATION WAS UNDERTAKEN TO DETERMINE HOW THE RESPONSE FROM JUNIOR HIGH SCHOOL STUDENTS WAS AFFECTED BY THEIR EXPOSURE TO MOTION PICTURE VERSIONS OF SHORT STORIES. THE RESEARCH WAS DIRECTED TOWARD DETERMINING WHETHER FILMS CAN BE USED TO ENHANCE THE TEACHING OF LITERATURE. THREE HYPOTHESES WERE TESTED--(1) STUDENTS WHO VIEW A FILM VERSION OF A SHORT STORY AS WELL AS READ IT RESPOND DIFFERENTLY FROM THOSE WHO ONLY READ IT, (2) STUDENTS WHO VIEW THE FILM BEFORE READING RESPOND DIFFERENTLY FROM THOSE WHO VIEW THE FILM AFTER READING, (3) DIFFERENCES IN RESPONSE ARE RELATED TO DIFFERENCES IN AGE, SEX, AND INTELLIGENCE. ALL STUDENTS IN THE JUNIOR HIGH DIVISION (385), PLUS 67 SIXTH-GRADERS OF THE MADISON SCHOOL, NEWARK, NEW JERSEY, PARTICIPATED IN THE STUDY. FOUR STORIES WERE USED IN THE EXPERIMENT. RESPONSE OBJECTIVES WERE--(1) COMPREHENSION, (2) ENJOYMENT, (3) IDENTIFICATION WITH CHARACTERS, AND (4) KNOWLEDGE OF WORD MEANINGS. SEPARATE TESTS WERE DEVELOPED FOR EACH STORY, AND TEST DATA WERE ANALYZED. RESULTS INDICATED THAT FILM-VIEWING, EITHER BEFORE, OR AFTER READING, IMPROVES RESPONSE. IMPLICATIONS FOR TEACHING AND FURTHER RESEARCH WERE PRESENTED. (JC)

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# EFFECTS of MOTION PICTURES on the RESPONSE to NARRATIVE

by Elias Levinson

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# EFFECTS OF MOTION PICTURES
# ON THE RESPONSE TO NARRATIVE

* * * * *

## A Study of the Effects of Film Versions of Certain Short Stories on the Responses of Junior High School Students

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1962

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# CHAPTER I

# PURPOSE OF THE STUDY AND DELINEATION OF THE PROBLEM

## The Problem

### General Statement

The purpose of this investigation is to determine how junior high school students' response to short stories is affected by their exposure to motion picture versions of the stories. It is an effort to determine whether films can be used to enhance the teaching of literature.

### Specific Problems

To accomplish the general purpose of the investigation, the following sub-problems were attacked:

1. To establish a basis for selecting those aspects of narrative art to which the students were expected to respond.

2. To construct measuring devices (tests) for recording the students' responses.

3. To present the viewing and reading experiences and to administer the tests to the students.

4. To discover the relations and interactions among the variables involved in the experiment:

   a. stimulus - single-medium or multiple-medium exposure to the stories

   b. response - differences in test score

   c. organismic - sex, age, and I.Q. differences among the students

## Definitions

"Response" is a comprehensive term which covers all those reactions to art included in such terms as "appreciation," "comprehension," "interpretation," "enjoyment," and "getting the meaning of." The very plurality of these terms, which overlap in the basic concepts and events to which they refer, led the investigator to use the more general term "response."

"Improvement of response" means attainment of a higher score on the tests used in the experiment.

"Junior high school students' include those students in grades six through nine. However, the study is designed to compare results on the basis of age rather than grade.

Delimitations

The forms of narrative used in the study were limited to the short story and relatively short films. Thus, novels and full-length films based upon short stories have been excluded. Short stories, which can be read in their entirety within a forty-five-minute class period present complete works rather than isolated fragments for the students to respond to and also give greater assurance that the students' responses are truly their own. The reading of a novel, which would have taken several days or weeks, would have created many opportunities for the students to be influenced by the opinions of others, hence, complicating the task of interpreting test results. Relatively short films - running time of less than forty minutes - were chosen in order to limit the total time for reading, viewing, and testing to ninety minutes.

The fact that the motion pictures were shown in school limited the selection to those available on 16mm film, the size required by the school projection equipment. Also, insofar as this equipment is inferior to that used in commercial theaters, the effects of the motion pictures were probably somewhat below their maximum potential. In addition, the students saw the films only once, whereas many had time to reread the stories entirely or in part before being tested. These conditions, however, are part of the realities of using these media in our schools and, therefore, quite appropriate to the experiment.

The choice of stories for the experiment was further limited by the requirement that they be of high literary quality, evidenced by their having been included in selective short story collections. Each of the stores, O. Henry's "The Last Leaf" and "The Cop and the Anthem," Poe's "The Tell-Tale Heart," and Daudet's "The Last Lesson," has several listings in Short Story Index,[1] and the last three appear in anthologies used in classes within the junior high school grade range.

The responses measured were limited to those that could be recorded by means of a pencil-and-paper, objective-type test. Each student's response was entirely an individual one, unsolicited and uninfluenced by either class discussion or teaching activity on the part of a teacher.

The population used in the experiment was limited to students in Madison School, Newark, New Jersey. This is a combined elementary and junior high school, with approximately 800 students in grades kindergarten through six and between 350 and 400 in the junior high division, grades seven through nine. The investigator was serving as vice-principal of the school at the time of the experiment. Because of the statistical technique used and the relatively small number of students involved, organismic variables were limited to age, sex, and I.Q. for the major part of the investigation. In one problem, reading level was substituted for I.Q. as a factor.

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[1] Dorothy E. Cook and Isabel S. Munro (Comps.), Short Story Index; Short Story Index Supplement 1950-1954.

## Basic Hypotheses

The experiment was designed to test the following hypotheses:

1. Students who view a film version of a short story as well as read it respond differently from those who only read it.

2. Students who view the film before reading respond differently from those who view the film after reading.

3. Differences in response are related to differences in age, sex, and I.Q.

## The Need for the Study

The use of films in the language arts program of our schools is now well established. Numerous English textbooks contain units on motion picture appreciation. Organizations such as William Lewin's Educational and Recreational Guides, Inc. have come into being to supply teaching guides and filmstrips for teaching films considered to have special merit for English classes. The National Council of Teachers of English cooperates with Teaching Film Custodians, an organization set up by the motion picture industry to adapt and distribute commercial films for classroom use, and itself distributes filmstrips of motion picture versions of certain literary works. The Council's Commission on the English Curriculum has described the use of motion pictures in connection with literature in the following terms:

> Films are an important ally in the study of literature. A traditional use of them has been showing, after the reading of a book, a film based on it; and many teachers have been disappointed unless they could have the entire film. Such a plan does not make for the maximum usefulness of films, nor does a reversal of the order - seeing a complete film first and then reading the story or play afterward. The latter may even prevent the reading of the book.
>
> Instead of emphasizing the possible identity between the film and the book, teachers should use films to promote the reading of books or to stimulate thinking. A brief film based upon a longer book . . . may be valuable in the study of literature. Discussion is essential if the presentation is to be significant . . .
>
> . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
>
> Though pictures and other audio-visual aids have a place in the enrichment of the teaching of literature, they

> are but tools to help students translate, as it were, printed works into the scenes and thoughts for which those symbols stand.[1]

There is, however, little scientific evidence to guide us in the most effective use of films for enhancing students' response to literary works. The excerpt from The English Language Arts in the Secondary School quoted in the preceding paragraph contains unverified statements and assumptions rather than established facts. What is meant by "maximum usefulness" - to whom and under what circumstances? How do we know what order of viewing and reading results in the maximum usefulness? Do all students profit equally from "these tools to help translate printed words"? *Is* discussion "essential if the presentation is to be significant"?

The dearth of scientific studies from which to draw answers to these and kindred questions is noted by Molstad, who, basing his comments on a review of 459 doctoral dissertations, writes:

> Analysis of titles reveals far too few experimental studies designed to test the effectiveness of audio-visual materials in the various academic areas and on particular levels within the various academic areas. In most cases, only two or three systematic, controlled evaluations of the contributions of these materials to the teaching of mathematics, language arts, history, etc. have been completed.[2]

A review of ninety-three additional studies made two years later by Molstad indicated no change in the situation as regards the language arts.[3]

The need for the study was verified further by personal contact with the following experts in the field: John Braslin, Director of Film Materials for Teaching Film Custodians; the late Dr. William Lewin, pioneer investigator of motion picture appreciation in the schools,[4] and co-author of a recent book on film appreciation;[5] and Professor Mark A. May, Director of the Yale Motion Picture Research

---

[1] The English Language Arts in the Secondary School, pp. 149-151.

[2] John Molstad, "Doctoral Dissertations in Audio-Visual Education," Audio-Visual Communications Review, I (Fall, 1956), pp. 296-297.

[3] John Molstad, "Doctoral Dissertations in Audio-Visual Education: Supplement 1, "Audio-Visual Communications Review, VI (Winter 1958), pp. 33-48.

[4] Photoplay Appreciation in American Schools, 1934.

[5] William Lewin and Alexander Frazier, Standards of Photoplay Appreciation, 1957.

Project,[1] participant in the Payne Fund Studies,[2] and collaborator in a more recent investigation of the relationship between films and interest in reading.[3]

## Plan of Presentation

Chapter II of the dissertation discusses related literature and the historical status of the problem. Works from a number of areas of research are cited for the information they give on the effects of literature, the nature and evaluation of response, and the relationship between motion pictures and prose fiction.

The preparation of the materials required for the experiment is discussed in Chapter III and Chapter IV. Chapter III describes the selection of the stories and films and includes a comparison of the two. The development of the tests is the subject of Chapter IV.

The actual performance of the experiment, involving the application of the materials to the students, is described in Chapter V and the results are discussed in Chapter VI. Here the statistical techniques are described and are applied to test the hypotheses involved in the investigation.

Chapter VII gives a general summary and general conclusions derived from the research. The final chapter, Chapter VIII, discusses application of the findings, topics for further study, and suggestions for improvement of procedure used in the present investigation.

---

1. Results of this project are reported in Mark A. May and Arthur A. Lumsdaine, Learning from Films.

2. Mark A. May and Frank Shuttleworth, Relationship of Motion Pictures to the Character and Attitude of Children. New York: The Macmillan Company, 1933.

3. Mark A. May and Nelle Lee Jenkinson, "Developing Interest in Reading with Film," Audio-Visual Communications Review, I (Fall, 1953), pp. 159-166.

## CHAPTER II

## RELATED LITERATURE AND HISTORICAL STATUS OF THE PROBLEM

The question of response is one of the basic considerations in the study of literature. As pointed out by Schorer, Miles, and McKenzie:

> Critics ask where art comes from, how it becomes what it is, and what it does; their questions are about the Source, the Form, and the End of art. The first question, which concerns the artist's experience, emphasizes the matter that goes into art; the second, which analyses the structural elements that compose the work as a whole, emphasizes the qualities of art in itself, the formal means; the third, which examines the response of the audience, emphasizes the function of art.[1]

Indeed, so far as the schools are concerned, response is the most important aspect of literature, for the inclusion of literary works in the curriculum rests on the assumption that they do have an effect upon students, that they do help produce attitudes, understandings, and behaviors deemed vital to our society. At the very beginning of his book on literature in the high schools Burton states, "Literature should help young people to live a better life. A successful program of teaching literature need accept nothing less at its major outcome."[2] Similar views can be noted in almost any statement of objectives for an English course of study and in the writings of recognized authorities on the teaching of literature.

However, despite the importance of response as a subject for research, it has received far less attention than other aspects of literature. Thomas Clark Pollock observes:

> . . . the response of the reader to the work of literature is studied in much less detail. Indeed, it is not a great exaggeration to say that as a scholarly interest it is almost entirely neglected except as part of the analysis of literary influence on particular writers. . . . One reason for this neglect may be that the general study of the reader's response is very difficult. . . . But the chief reason is simply that professional students of literature have not accepted as a group the challenge to investigate this important phase of literary process.[3]

---

[1] Mark Schorer, Josephine Miles, and Gordon McKenzie, Criticism, the Foundations of Modern Literary Judgment, pp. vii-viii.

[2] Dwight L. Burton, Literature Study in the High School, p. 3.

[3] The Nature of Literature, p. 205.

More recently Russell made a similar observation:

> From the research point of view, however, the effects of reading are an uncharted wasteland in an otherwise well-mapped territory. We have discovered many facts about eye movements in reading, reading interests and tastes, and methods of reading instruction - but we don't know much about what reading does to people.[1]

Although the investigator has come across very few studies dealing specifically with the affects of films on the response of students to the works of fiction upon which the films were based, there are a number of works dealing with various aspects of the problem. There will be discussed under the following headings: (1) the general effects of literature, (2) tests and measurement of response to specific pieces of literature, (3) research in the field of reading, and (4) relation of the film to prose fiction. Some works, of course, pertain to several of these categories. A fifth group of works, those dealing with the nature and appreciation of fiction and the short story in particular, will be discussed in Chapter IV in connection with the development of the tests used in the experiment.

## The General Effects of Literature

Mortimer J. Adler's Art and Prudence is a detailed presentation of the philosophical and historical aspects of the question of the effects of literature. Taking the basic question: "How does art, particularly poetry and drama, affect human behavior and to what extent is control, therefore, justified?" Adler traces the manifestations of opposing points of view, stated originally by Plato in the Republic and by Aristotle in the Poetics, down to the modern controversy over the influence of motion pictures upon the young. He demonstrates that this has been a perennial problem throughout the ages, showing itself most sharply in our own time in the efforts to control motion pictures and the other mass media.[2] The current investigations by committees of Congress and other legislative bodies and the activities of "clean literature" groups in many communities attest to the continued concern with this problem.

Adler's work is related to the present study also through his discussion of the aesthetics of the film and its relationship to the older literary forms. Pointing out that as "an imitation of human action" the motion picture qualifies as an art form along with the novel and the drama, he defines the relationship between it and its literary predecessors in the following terms:

---

[1] David H. Russell, "Some Research on the Impact of Reading," The English Journal, XLVII (October, 1958), p. 398.

[2] Adler's book was written as the motion picture industry's reply to the Payne Fund Studies, Motion Pictures and Youth, published in the early 1930's under the general editorship of W.W. Charters. A popular summary of the results of the twelve research efforts which comprised the project is H.J. Forman's Our Movie Made Children.

> The talking picture is closer to literature, and more especially dramatic literature. Yet as a subsequent aesthetic analysis of the motion picture will demonstrate, the motion picture is a distinct species of poetry . . ., a kind of imaginative literature or fiction; its producer is primarily a maker of plots, though his medium and manner be different from that of the novelist and the playwright.[1]

This affinity between the film and other forms of narrative suggests that experiencing a story in one medim may affect response to it in another.

A discussion of the effects of literature in more limited terms is presented by Douglas Waples and his colleagues[2] in What Reading Does to People. Although they consider all forms of reading matter, from textbooks and political campaign literature to novels and belles lettres, and are concerned primarily with the "social effects" of reading, the disposition of the readers to accept or resist social change, they do name the "aesthetic" and "respite" as two of the main types of effects reading may produce. By the former they mean "genuinely artistic writing which helps the reader view reality through the author's more observing eyes"[3] and by the latter, "diverting items which come between the reader and his worries."[4] Despite a list of 155 references under the heading "Elements of Reading Effects," they consider this area of their study the weakest in documentation.

General questions about the effects of literature similar to those considered by Waples were the concern of Klapper in his attempt to answer the following queries put to him by the Director of the Public Library Inquiry of the Social Science Research Council, Columbia University:

> Do the mass media raise or lower popular taste, and how?
>
> What are the comparative effects of books and each of the other media, including face-face- discourse, and multiple-media operations?

---

1. Art and Prudence, p. 23.

2. Bernard Berelson and Franklyn R. Bradshaw.

3. What Reading Does to People, p. 13.

4. Ibid., p. 14.

> What is the function and effect of "escapist" communication (best sellers, soap operas, etc.)?
> How is persuasion with regard to important civic attitudes carried on with the greatest likelihood of effectiveness?[1]

Although Klapper's study is valuable as an organized body of references in the field, he concluded that "the paucity of empirical data bearing directly upon the questions asked by the Director of the Inquiry is perhaps the most conspicuous finding of the entire research. It is ... impossible, on the basis of the existing empirical evidence, to provide a definitive answer to any one of the four questions."[2]

Russell[3] summarized the research on the impact of reading under four categories: (1) characteristics of the material read, (2) content of the ideas communicated, (3) traits of the reader, and (4) overt responses as effects of reading. As mentioned previously, he too notes the paucity of research in the field of response despite the cogent reasons he presents for increasing our knowledge of this aspect of the reading process.

Using the questionnaire technique, Lorang[4] investigated the moral and emotional effects of books and other types of reading matter on high school students. There was a high correlation between the ratings of nine judges as to the suitability of a selected list of books for adolescents and the ratings actually given the books by the students in terms of "good" or "bad" effects. One of the most valuable parts of Lorang's works for the present study is her survey of the literature of moving picture research, to which she turned "owing to the absence of experimental studies on the effects of reading."[5]

Lind[6] used the biographical approach to determine the effects of childhood reading on the development of personality. Basing her conclusions on forty-four autobiographical accounts of childhood reading submitted by college students, she noted four groups of effects: (1) escape, (2) temporary diversion, (3) defining reader's conception

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1. Joseph T. Klapper, The Effects of Mass Media., Intro - 2.

2. Ibid., p. Intro - 13.

3. David H. Russell, "Some Research on the Impact of Reading," The English Journal, XLVII (October, 1958), pp. 398-413.

4. Mary Corde Lorang, The Effect of Reading on Moral Conduct and Emotional Experience.

5. Ibid., p. 3.

6. Katherine N. Lind, "Social Psychology of Children's Reading," American Journal of Sociology, 41 (April, 1936), pp. 454-469.

of his role, and (4) relating to objective interests and activities.

## Tests and Measurement of Response to Specific Pieces of Literature

The works mentioned heretofore have been concerned with the response to literature in general terms; we turn now to works which are concerned with the precise measurement of response to specific pieces of literature. The investigator has found these studies, which discuss various techniques for testing response, particularly valuable for determining what aspects of response seem amenable to objective-type testing as well as for suggestions on specific procedures of test construction.

Loban[1] presents sixteen ideas on how to evaluate growth in the study of literature, including a number from the fields of psychology and sociology which may afford insight into students' responses to literary works. Pooley[2] also considers the general problem of measuring response but confines himself to the question of appreciation. Having noted the "no two people will agree exactly on a definition of the word appreciation,"[3] he defines that elusive term as "the emotional responses which arise from basic recognitions, enhanced by an apprehension of the means by which they are aroused."[4]

Pooley's statements are particularly noteworthy since they point up two recurring ideas one encounters in a review of the literature on the testing of response. The first is the lack of agreement as to the meaning of "appreciation," "interpretation," "comprehension," and the other concepts included in the term "response." The second is the recognition of the dual aspects of response: on the one hand, an emotional involvement, a recreation of experience; on the other hand, an act of appraisal, evaluation, and judgment. As will be indicated subsequently, literature tests have taken one or the other of these two basic aspects as the objective they purport to measure.

Oscar K. Buros' Mental Measurement Yearbooks[5] are an important source of information about literature tests. Each test is described briefly and is reviewed critically by at least one - two, in most instances - authority in the field. Each of the last three volumes in the series is a supplement to its predecessors, since it includes only tests newly published or revised in the interval between its appearance and that of the previous edition. The second book, _The 1940 Mental Measurement Yearbook_, includes all the items in the 1938 yearbook plus new material.

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[1] Walter Loban, "Evaluating Growth in the Study of Literature, " The English Journal, XXXVII (June, 1948), pp. 277-283.

[2] Robert C. Pooley, "Measuring the Appreciation of Literature, " The English Journal, XXIV (October, 1935), pp. 627-633.

[3] Ibid., p. 628.

[4] Loc. cit.

[5] Despite their designation as "Yearbooks" only five volumes have been published since 1939.

Judging by the descriptions and reviews of the tests under the heading "Literature," one can discern three approaches to the problem of evaluation in this area. Some tests are concerned only with measuring acquaintance with authors, works, and other facts of literary history. In this group can be included inventories of various sorts. Another group can be characterized by concern with the measurement of "appreciation," "interpretation," "comprehension," and other aspects of _response_ to specific pieces of writing which the student encounters as part of the test. This is the sort of test which has the greatest applicability to the present study, and a number of them are discussed in greater detail in subsequent parts of this chapter. A third group of tests include a _combination_ of the elements of acquaintence and response. Table I (p. 12) summarizes some general facts about the literature tests listed in Buros.

One of the earliest attempts to develop a literature test on the basis of scientific principles of test construction was made by Burch,[1] whose efforts resulted in the _Stanford Test of Comprehension of Literature_.[2] She indicates her definition of response by writing:

> . . . the student who profits by the reading of a given piece of literature must be able to do one or all of the following:
>
> 1. Imaginatively enter and vicariously participate in the situations and events set forth on the printed page.
>
> 2. Judge the character of people written about, sense the motives of their conduct, and share their emotional experiences.
>
> 3. Understanding the ideas expressed in expository writing.[3]

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[1] Mary C. Burch, "Determination of a Content of the Course in Literature of a Suitable Difficulty for Junior and Senior High School Students," _Genetic Psychology Monographs_, 4 (July and December 1928), pp. 169-332.

[2] _Stanford Test of Comprehension of Literature_. Stanford: Stanford University Press, 1928.

[3] Burch, _op. cit._, p. 180.

## TABLE I

Literature Tests in Buros'
Mental Measurement Yearbooks

| Title | Fifth | Fourth | Third | 1940 |
|---|---|---|---|---|
| Copyright Date | 1959 | 1953 | 1949 | 1941 |
| Period Covered | 1952-58 | 1948-51 | 1940-7 | through 1939 |
| Number of Items | 12 | 18 | 10 | 14 |
| Approach: | | | | |
| (1) Acquaintance | 3 | 6 | 4 | 10 |
| (2) Response | 4 | 2 | 6 | 3 |
| (3) Combination | 5 | 10 | 0 | 1 |

Acting upon the further premise that these three kinds of response are related to three different types of literature in which the main interest is, respectively, in action and event, in character portrayal and emotion, or in appeal to intellect, she devised a three-part test, using excerpts from both poetry and prose, followed by multiple-choice questions to gauge comprehension.

In 1929 apppeared Speer's study of appreciation.[1] His approach to response was quite different from Burch's, for he saw the "individual's recognition of merit" as "an index which is basic and essential to appreciation."[2] Therefore, his test of response was based upon the ability of the subject to pick out the better of a pair of selections. Speer was interested in appreciation of poetry and art, as well as prose; and it is interesting to note that, among the sixth grade pupils with whom he experimented, he found little correlation between ability to recognize merit in one artistic medium and another. He also noted little correlation between mental age and the recognition of merit in either poetry or prose.

Carroll,[3] author of the *Prose Appreciation Test*,[4] used an approach to appreciation similar to Speer's. Taking as his premise that the greatest power in literature appreciation is "the power to differentiate the good from the less good, and the less good from the very bad,"[5] he devised a test which requires the student to rank in order of excellence a group of four descriptive passages. Twelve such groups compromise the entire test. The quality of the student's response is measured by how closely his rankings of the selections correspond with those of a group of experts.

Another experiment based upon the recognition-of-merit approach to appreciation was performed by Williams and his colleagues in Britain.[6] Using as subjects two hundred girls, aged eleven through seventeen, from four different types of schools, they employed five merit-rating tests to measure appreciation of poetry and prose. Some of the tests were based upon the ranking method such as Carroll used;

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[1] Robert K. Speer, *Measurement of Appreciation of Poetry, Prose, and Art*.

[2] *Ibid.*, p. 3.

[3] Herbert A. Carroll, "A Standardized Test of Prose Appreciation for Senior High School Students," *Journal of Educational Psychology*, 23 (September, 1932), pp. 401-410.

[4] *Carroll Prose Appreciation Test*. Philadelphia: Educational Test Bureau, 1932.

[5] *Ibid.*, "Examiner's Manual," p. 3.

[6] E.D. Williams *et al.*, "Tests of Literary Appreciation," *British Journal of Educational Psychology*, 8 (November, 1938), pp. 265-284.

others, upon the comparison technique such as Speer used. The British experimenters concluded that literary sense and the sense of beauty begin at an earlier age than is usually expected; that as children get older there is a steady increase in judgment based upon specifically literary merits; and that, unlike the conclusions reached by Speer, there is a high correlation between aesthetic appreciation and intelligence.

Chapter IV, "Aspects of Appreciation," of Smith and Tyler's *Appraising and Recording Student Progress* presents the concepts about appreciation which lie behind the Progressive Education Association's *Interpretation of Literature Test*.[1] The authors[2] include the element of "liking" an activity as well as "insight" into an activity as part of the reactions to reading which are included in appreciation. They list the following seven behaviors by which an individual manifests appreciation:

1. Satisfaction in the thing appreciated - enjoyment.
2. Desire for more of the thing appreciated.
3. Desire to know more about the thing appreciated.
4. Desire to express oneself creatively.
5. Identification of one's self with the thing appreciated.
6. Desire to clarify one's thinking with regard to the life problem raised by the thing appreciated.
7. Desire to evaluate the thing appreciated.[3]

The *Interpretation of Literature Test* has a particularly close relationship to the present study since it is based upon a short story, O. Henry's "Municipal Report." Examination of the titles of the seven parts of the test reveals that the sixth behavior listed above, "desire to clarify one's thinking with regard to the life problems raised by the thing appreciated," was the dominant objective in the minds of the authors.

White,[4] working for the Unites States Armed Forces Institute, produced a test to measure the competence of high school students in reading and interpreting literature. Her study contains a useful evaluation of eighteen tests of literature then extant, all of which she found dificient on at least two of the four criteria she considered valid for a test of this type. Her criteria were (1) the test should be long enough - more than one hour when several abilities are involved; (2) the selections should be long enough to present a natural rather than artifical reading situation; (3) the test should measure power, not speed; (4) an adequate range of abilities should be measured. White distinguished seven major abilities essential to reading and interpreting literature, but there was no attempt made in her test to relate items to specific abilities. Her test included poetry as well as prose, non-fiction as well as fiction. As in the cases of Burch and the Progressive Education Association, her emphasis was primarily upon response as an experience rather than an exercise in the recognition of merit, which Speer and Carroll stressed.

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[1] *Interpretation of Literature Test*. Princeton: Educational Testing Service, 1950.

[2] Chester W. Harris, Bruno Bettelheim, and Paul B. Diederich.

[3] *Appraising and Recording Student Progress*, p. 250.

[4] Verna White, "The Construction of a Test for High School Students in the Reading and Interpretation of Literature" (unpublished Doctor's thesis, The University of Chicago, Chicago, 1945).

Harris[1] used an approach similar to White's in his study of students' response to literature. He also defined response in terms of (1) a group of behaviors characteristic of an individual who may be said to appreciate a literary selection and (2) a group of abilities that are assumed to make possible or underlie the response. He listed five characteristic behaviors and three abilities but limited his study to "enjoying or liking literature" from the former group and "comprehending what is read" from the latter. He employed a simple questionnaire technique to measure enjoyment and a multiple-choice test on passages from various kinds of writing to measure comprehension. Harris presents a thorough discussion of the nature of appreciation, including a review of pertinent literature. He notes the variety of meanings given to the term and arrives at his own definition: "a response of the whole organism in which feeling and understanding are coincidentally operative."[2]

A study of responses to short stories was used by Loban[3] in his investigation of the relationship between literature and the development of sympathy and insight into human relations. Working with students in grades eight through twelve, he used four devices for recording responses: (1) a free written discussion immediately after the conclusion of the story, (2) a special scale of selected statements, each with a five-point choice of response ranging from "I definitely agree" to "I definitely disagree," (3) a questionnaire eliciting comments on crucial aspects of the story, and (4) a check list by means of which to record attitude toward the main character. Loban mentions the possibility of using motion pictures to effect the kind of response for which he used literary materials in his experiment: "As a measure of sympathy, a short story is sometimes less effective

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1. Chester W. Harris, "Measurement of Comprehension of Literature and Its Relation to Enjoyment" (unpublished Doctor's thesis, The University of Chicago, Chicago, 1946).

2. Ibid., p. 19.

3. Walter Loban, Literature and Social Sensitivity.

than a movie or a play in which the situation intended to evoke sympathy is not so dependent upon imagination and verbal ability."[1] It is this likelihood that the film and the short story may produce the same kind of effects that suggests the use of one medium to enhance the other.

Another experiment involving short stories was Burton's study of the relative effectiveness of three methods of teaching the short story to high school seniors.[2] The students' appreciation was measured by Carroll's Prose Appreciation Test, and two tests devised by Burton himself: a short story comparison test and a short story choice test.[3] These tests emphasize the recognition-of-merit and the critical aspects of appreciation. Although none of the methods used for teaching appreciation of the short story was shown to be superior to the others, Burton concluded that the experiment demonstrated that appreciation can be taught and tastes raised in a relatively short time. He also considered the factors of mental ability and reading ability in relation to response. While concluding that these two factors are important in literary appreciation, he also pointed out that "there is an important factor of appreciation of literature separate from intelligence and reading skill;"[4] i.e. high intelligence and reading ability will not guarantee literary appreciation.

## Research in the Field of Reading

The connection between the present study and research in the field of reading is obvious. The studies by Waples[5] and by Russell[6] already referred to might just as properly have been discussed under this category. Indeed, taking a broad definition of "reading" - such as the one White gives when she defines it as a concept "which includes not only the thought processes but also the more subjective reactions of the reader according to his fund of experience"[1] - one might state that the purpose of this investigation is to determine the extent to which junior high school students' reading of short stories is affected by their exposure to motion picture versions of the stories. Similarly, all the tests described in earlier parts of this chapter are, in a sense, reading tests. To complete the picture, however, mention will now be made of some reports of research in the general field of reading which have provided insights into the nature and evaluation of response.

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[1] Ibid., p. 36.

[2] Dwight L. Burton, "The Relationship of Literary Appreciation to Certain Measurable Factors," Journal of Educational Psychology, 43 (November, 1952), pp. 436-439.

[3] Burton gives samples of his tests in his Literature Study in the High Schools.

[4] "The Relationship of Literary Appreciation to Certain Measurable Factors," Journal of Educational Psychology, 43 (November, 1952), p. 439.

[5] Douglas Waples, Bernard Berelson, and Franklyn W. Bradshaw, What Reading Does to People.

[6] David H. Russell, "Some Research on the Impact of Reading," The English Journal, XLVII (October, 1958), pp. 398-413.

The various aspects of response have been a major concern of reading specialists. As Gray points out in his introductory article in the report of the thirteenth of the University of Chicago's annual conferences on reading:

> Discussions of interpretation in reading are not new to the members of this conference. A survey of the published proceedings shows clearly that no aspect of reading has received more persistent and vigorous emphasis during the thirteen preceding conferences than how to promote increased ability to interpret what is read.[2]

The conference referred to in the above quotation considered the problem of interpretation in reference to all kinds of reading material. Contributions to the report of the proceedings which relate more specifically to the question of response to fiction are the articles by Gray,[3] Thomas,[4] Hayes,[5] Cook,[6] and Kincheloe.[7] Traxler's article[8] on tests

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1. Verna White, "The Construction of a Test for High School Students in the Reading and Interpretation of Literature," (unpublished Doctor's thesis, The University of Chicago, Chicago, 1945) p. 22.

2. William S. Gray (ed.), Promoting Growth toward Maturity in Interpreting What is Read, Proceedings of the Annual Conference on Reading Held at the University of Chicago, 1951, Volume XIII.

3. William S. Gray, "Reading as Experiencing," pp. 58-62.

4. Russell B. Thomas, "Relation between the Nature of the Material Read and Methods of Interpretation," pp. 62-66.

5. Albert M. Hayes, "Promoting Growth in Interpreting Different Kinds of Material in Grades Eleven to Fourteen," pp. 81-85.

6. Luella B. Cook, "Developing Power in Identifying Clues to Meaning," pp. 115-119.

7. Isabel Kincheloe, "Promoting Growth in Interpreting What is Read in the Light of Its Broader Context in Grades Eleven to Fourteen," pp. 113-118.

8. Arthur E. Traxler, "Critical Survey of Tests for Identifying Difficulties in Interpreting What is Read," pp. 195-200.

is a valuable survey of this area. He includes a table listing the various kinds of reading abilities tested in the twenty-eight tests he surveyed and the relative frequency of each of the abilities. Strang's article on remedial procedures in interpretation makes reference to the use of motion pictures:

> Whenever possible, retarded readers should see a worthwhile film treatment of the book they are about to read. The motion picture gives them a visual acquaintance with the setting, the times and the people, which is then enriched by the reading of a book. By this means pupils also become aware of the special contribution of motion pictures and books.[1]

The present study extends this hypothesis to all students, not merely retarded readers.

The Twenty-first Annual Conference of Reading held at the University of Chicago also had a theme closely related to problem with which the investigator is concerned.[2] Tyler[3] considers the general problem of evaluation, while Bracken[4] makes specific suggestions for appraising reading skills in English. Anderson[5] includes a list of twelve competencies which he found commonly mentioned in the literature on the nature of comprehension and interpretation. The papers by Bland[6] and Sprietsma[7] evaluate standarized reading tests.

Reference has been made to a number of lists of basic skills or competencies involved in comprehension and other aspects of the reading process. Davis[8] studied hundreds of items which appear on

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1. Ruth Strang, "An Appraisal of Corrective and Remedial Procedures in Interpretation," pp. 200-205.

2. Helen M. Robinson (ed.), Evaluation of Reading, Proceedings of the Annual Conference on Reading Held at the University of Chicago, 1958, Volume XX.

3. Ralph W. Tyler, "What is Evaluation?" pp. 4-9.

4. Dorothy K. Bracken, "Appraising Competence in Reading in Content Areas," pp. 56-60.

5. Harold A. Anderson, "Comprehension and Interpretation," pp. 101-106.

6. Phyllis Bland, "Selection and Use of Standardized Reading Tests in Grades Seven through Nine," pp. 125-128.

7. Lewis Sprietsma, "Selection and Use of Standardized Reading Tests in Grades Ten through Fourteen," pp. 128-132.

8. Frederick B. Davis, "Fundamental Factors in Reading Comprehension," Psychometrika, IX (September, 1944), pp. 185-197.

these lists and grouped them into nine general abilities, which he designated as "fundamental factors of reading comprehension." They range from "knowledge of word meaning" to "ability to determine a writer's purpose, intent, and point of view, i.e., to draw inferences about the writer."[1] Further analysis showed that the two which ranked highest were knowledge of the meaning of words used and reasoning, by which is meant the ability to see relationships and to draw inferences.

Reading in the High School and College,[2] also breaks down the reading process into major categories of understanding, attitudes, and skills used in interpreting what is read. The Yearbook Committee distinguishes the following four main aspects: (1) grasping the literal meaning of what is read, (2) securing the broader meaning inherent in a passage, (3) reacting to what is read, and (4) fusing the ideas acquired with previous experience. Other sections of this yearbook which relate to the present study are Leary's observations about reading problems in literature[3] and Meckel's chapter on evaluation.[4]

## Relation of the Film to Prose Fiction

The frequency with which film makers have turned to works of prose fiction as material for motion pictures attests to the close relationship between these two media. Adler's treatment of the theoretical and philosophical bases of this relationship has already been mentioned.[5] Similarly, Langer[6] considers the film not only a new technique, but a new poetic mode which lies closer to narrative than to either plastic forms of art or to the drama. Eisenstein,[7] the celebrated Russian film-maker, sets forth in some detail how his approach to film making resembles the narrative technique of Dickens and other writers of fiction. Thorp concludes that

> While we wait for them [works on the theory of motion picture art] to appear . . . we might learn a good deal

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[1] Ibid., p. 186.

[2] Nelson B. Henry (ed.), Reading in the High School and College, Forty-seventh Yearbook of the National Society for the Study of Education, Part II, 1948.

[3] Bernice E. Leary, "Meeting Specific Reading Problems in the Content Fields," pp. 136-179.

[4] Henry C. Meckel, "Evaluating Growth in Reading," pp. 251-275.

[5] Supra, p. 8.

[6] Susanne K. Langer, " A Note on the Film," Feeling and Form, pp. 411-415.

[7] Sergei Eisenstein, The Film Sense.

> for ourselves by reading books on the structure of the novel. Just substitute now and then the word "picture" for the word "book" and a surprising number of theories and critical data will remain true.[1]

Despite these theoretical statements on the affinity between motion pictures and prose fiction, one is often more aware of the differences between a work and its film version. Asheim[2] made a detailed study of these transformations as manifested in the motion picture versions of twenty-four novels. He attributes the changes to three factors: (1) the organization of the motion picture industry, (2) the nature of the audience for motion pictures, and (3) the nature of the film medium itself. He also presents a valuable technique for comparing the content of a motion picture and a prose work.

Bluestone[3] goes further than Asheim in his study of the difference between novels and their film versions. His thesis is that differences must inevitably appear because of the basic difference between the two media as art forms. He insists that to judge a film on the basis of how faithful it is to the book is as fruitless as to judge a ballet by comparing it with a piece of architecture. As he says:

> . . . in film criticism it has always been easy to recognize how a poor film "destroys" a superior novel. What has not been sufficiently recognized is that such destruction is inevitable. In the fullest sense of the word, the filmist becomes not a translator of an established author, but a new author in his own right.[4]

Using Asheim's technique of analysis, Bluestone compares six novels with their film versions. Although he does discuss the differences between the two, his final judgment of the motion picture is as an autonomous work of art irrespective of its faithfulness to the written work.

However, despite the questions of theoretical relationship between the film and prose fiction as art forms and the actual differences between the productions an audience encounters, as revealed by content analysis, the concern of this study is with the effect of the

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1. Margaret Thorp, "The Motion Picture and the Novel," American Quarterly, III (Fall, 1951), p. 202.

2. Lester Asheim, "From Book to Film: A Comparative Analysis of the Content of Selected Novels and the Motion Pictures Based on Them," (unpublished Doctor's thesis, The University of Chicago, Chicago, 1949).

3. George Bluestone, Novels into Film.

4. Ibid., p. 62.

multiple-medium exposure. Differences or similarities apparent to an adult critic become significant for the present experiment only to the extent to which they manifest themselves in the responses of students to the prose works. As Asheim points out under "Suggestions for Further Study:"

> Equally important would be case studies which would investigate the response to the book of persons who have seen the film, to ascertain whether the pattern of adaptation, seen prior to the reading, affects reader acceptance of the original material. . . . We do not know whether viewing enriches the reading, or whether the film-going impoverishes the reading.[1]

The investigator has encountered only two limited studies of the effects of films upon the response to specific literary works. Lumsdaine[2] performed an experiment to determine the effects of a film on the interest of students in reading *David Copperfield*. Using as subjects 108 second-year high school girls, he measured the following behaviors to gauge the interest-arousing power of the film: (1) taking a test on factual items that could be learned only from the book, (2) reading ahead of the assigned chapters, (3) indicating a desire to read the book voluntarily, (4) withdrawing the book and other works by Dickens from the school library, and (5) answering various questions asked both before and after seeing the film to assess interest in the book. Although there were some slight gains in favor of the film group, Lumsdaine concluded that " . . . the relative absence of marked effects, which might have been predicted to show up . . ., casts some doubt on the rather common belief that seeing a dramatic story-type movie based on a book will be likely to stimulate a strong desire to read the book, or will greatly increase the amount learned from reading it.[3]

May and Jenkinson[4] were also concerned with power of a film to motivate reading of a book. The purpose of their experiment was to test the hypothesis that " a teacher can do a more effective job of motivating students to read a book (Stevenson's Kidnapped) by using a film made up of only a few interesting episodes, rather than one which gives the full story."[1] The relative effectiveness of the two types of film was measured by (1) a record of withdrawals from the library, (2) reports by the students of whether they had started to read and how much they had read, and (3) scores on an objective test based on the book. The hypothesis was sustained by only the first of these measurements, withdrawals from the library. On the basis of amount of reading done and scores on the objective test there as no significant difference between those who saw the motivetional version of the film and those who saw the full-length version.

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[1] Asheim, *op. cit.*, p. 314.

[2] Arthur A. Lumsdaine, "Gauging the Effects of Films on Reading Interests," *Learning from Films*, Mark A. May and Arthur A. Lumsdaine, pp. 185-194.

[3] *Ibid.*, p. 194. Lumsdaine's conclusion about the failure of film to stimulate interest in reading is curiously at variance with the reports of phenomenal increases in the library circulation and sales of some books after the release of their motion picture versions.

[4] Mark A. May and Nelle Lee Jenkinson, "Use of Motivational Film for the Development of Interest in Reading," *Audio-Visual Communications Review*, I (Fall, 1953), pp. 159-166.

## Summary

The importance of the question of response to literature has long been recognized. The philosophical and theoretical aspects of the problem have been the subject of a continuing debate, from the time of the ancient Greeks to our own day. A number of surveys have been made to determine the general nature of the effects of literature as presented through various media, but as a field of scholarly interest it has been comparatively neglected. As Pooley points out:

> The field of literature is illuminated by relatively few strictly controlled researches. . . .
>
> The reasons for this dearth of factual information are fairly obvious. The desired outcomes of literature instruction do not lend themselves to quantative measurement. . . . A careful examination of almost any published literature test will reveal how far short it falls of measuring the achievement of aims set up in course of study.[2]

Authors of literature tests have approached the subject from the point of view of measuring either acquaintance with facts of literature or response to specific pieces of writing, using the term "response" to cover a variety of reactions, such as, "enjoying," "comprehending," "interpreting," "appreciating," etc. Within the latter group, which is of greatest relevance to the present study, two different emphases in test objectives can be distinguished: (1) recognition of merit as the basic ability by which appreciation can be gauged and (2) the experience of the reader with the piece of writing as the objective to be measured, with recognition of merit regarded as only one of a number of types of reaction. Reports by test-makers on how they developed their tests as well as an examination of the tests themselves and their accompanying materials are helpful in clarifying objectives and suggesting techniques of evalua-

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1. Ibid., p. 162.

2. Robert C. Pooley, "Literature," Encyclopedia of Educational Research, Second Edition, p. 396.

tion. The objective-type, multiple-choice test format is most widely used.

Experts in the field of reading have shown a continuing interest in response as part of the overall reading process. By identifying the major competencies and behaviors in various types of response they have established objectives for appraisal. Research in this field, as well as in the testing of response to literature as a specialized area, indicated the feasibility of contructing the measuring devices required by the present experiment.

The affinity between the motion picture and prose fiction has been frequently noted although Bluestone dissents from this view on aesthetic grounds. Detailed analyses of differences between works of fiction and their film versions have been made, but only slight research has been done on the actual effect of the latter upon response to the original prose stories. The experiments have demonstrated that films do have some capacity to arouse interest in reading the novels, upon which they were based, with a "teaser" type film, made up of selected excerpts, more effective than one which told the whole story.

# CHAPTER III

## PREPARATION OF MATERIALS - STORIES AND FILMS

The materials needed for the experiment included copies of the short stories the students were to read, prints of the motion pictures based on the short stories, and tests for recording and measuring response. This chapter will treat the selection and preparation of the stories and the films. Chapter IV will present the procedure by which the tests were developed.

### The Stories

Four short stories were used in the experiment: "The Cop and the Anthem" and "The Last Leaf" by William Sidney Porter (O. Henry), "The Tell-Tale Heart" by Edgar Allan Poe, and "The Last Lesson"[1] by Alphonse Daudet. Each of the stories was short enough to enable even the slowest reader to finish it within the time available for each part of the experiment. They are also works of relatively high literary quality as indicated by the fact that each has been included in a number of selective short story anthologies.

The texts of the stories actually used for the experiment are those found in the following anthologies: "The Cop and the Anthem" and "The Last Leaf" in *The Pocket Book of O. Henry Stories*, Harry Hansen, editor; "The Tell-Tale Heart" in *Great Tales and Poems of Edgar Allan Poe*, Pocket Books, Incorporated, publishers; and "The Last Lesson" in *Bedside Book of Famous French Stories*, Belle Becker and Robert N. Linscott, editors. The investigator reproduced the stories in a uniform format to eliminate differences in typography and in other physical features of the texts as factors which might possibly produce differences in response, and also to facilitate handling of the materials.

### The Films

The availability of motion pictures was a much more limiting factor in the selection of materials than was the availability of stories. Not only had there to be a film version of the story, but the film had to be less than forty minutes long and available on 16mm. Thus, for example, Bret Harte's "The Outcasts of Poker Flat" could not be used because it had been made into a full-length feature; Stephen Crane's "The Bride Comes to Yellow Sky" could not be used because it was not available on 16mm.

The investigator consulted the *Educational Film Guide*[2] and

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1. This story, a translation from the French, is also called - and more accurately so - "The Last Class."

2. Frederic A. Krahn (comp.), *Educational Film Guide*, 1951 Edition.

catalogues of a number of distributors of 16mm films for listings of motion pictures that would meet the requirements of the experiment. He also considered kinescope recordings of television productions of short stories as a possible source of film versions, but had to give up the idea because the films were not available to him.

The films selected were "The Tell-Tale Heart," produced by Metro-Goldwyn-Mayer, distributed by the film library of Newark, New Jersey, Board of Education; "The Last Lesson," produced by Metro-Goldwyn-Mayer, distributed by the film library of the American Museum of Natural History; "The Cop and the Anthem," part of a full-length feature entitled *O. Henry's Full House*, produced by 20th Century-Fox, distributed by Films Incorporated; and "The Last Leaf," also part of *O. Henry's Full House*, adapted by Teaching Film Custodians,[1] distributed by the film library of the American Museum of Natural History. All are black-and-white, sound productions.

### *Comparison of Films and Stories.*

In order to provide an additional basis for explaining differences in response to the stories, a comparative analysis of the content of the films and stories was made. The value of this procedure rests upon an assumption about the relationship between the content of communication and effects as stated by Berelson in the following terms:

> Content analysis assumes that inferences about the relationship between intent and content or between content and effect can validly be made, or the actual relationship established. . . . This assumption that knowledge of content can legitimately support inferences about non-content events is basic to the central contribution of content analysis, namely, to illuminate certain non-content areas. Content analysis is often done . . . to identify the (presumable) effects of the contents upon the attention, attitudes, or acts of readers and listeners.[2]

The present experiment has produced data which make possible the checking of the inferences and presumptions which Berelson mentions against the actual response of an audience.

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[1] It should be noted that adapted film version differs substantially from the original film version in *O. Henry's Full House* but is more faithful to O. Henry's story. The original film has an opening sequence which establishes rejected love as the cause of Johnsy's lack of will to live. This plot element is not in the story O. Henry wrote and is also omitted in the adapted film.

[2] Bernard Berelson, *Content Analysis in Communication Research*, p. 18.

## Method of Comparison

The method used for making the comparative analyses of stories and films was based upon the technique used by Asheim in his comparison of books and films.[1] The main purpose of the comparison was to determine the faithfulness of the film to the short story or, to put it another way, the extent to which the film deviates from the story. Each story was broken down into its major elements and each line of the text was accounted for under one or another of these elements. The relationship between the number of lines devoted to a particular element and the total number of lines in the story was expressed as a percentage. Each film was similarly analyzed on the basis of the number of seconds devoted to each element. To determine this, the investigator used notes made during several viewings of the films, a tape recording of the sound tracks, and, in the case of "The Last Leaf" and "The Cop and the Anthem," a copy of the film script on which the number of feet of film used for each shot had been noted. The results of these two analyses were put together to form a table of comparison in which differences in percentages for the same element have been expressed as deviations. The sum of these deviations for a particular motion picture has been designated on its *deviation index*.

The quantitative analysis represented by the deviation index does not account for all the differences between a short story and a film derived from it, however. Both may include the same incidents but in a different sequence; dialogue in the one may have been altered by addition, curtailment, or omission in the other; the point of view from which the story is told may have been changed in the film. Therefore, a discussion of qualitative differences follows each table of comparison.

## Definitions

The terms "exposition," "commentary," and "transition" used in the tables of comparison requires some explanation, for they are subject to a variety of interpretations.

"Exposition" refers to those parts of a story, usually at the beginning, which set the stage, as it were, for the main action of the narrative. It may establish the setting, explain the circumstances of the telling of the story, relate events which occurred before the story opens, or present the circumstances out of which the conflicts and plot incidents arise. For example, the first paragraph of "The Tell-Tale Heart" has been classified as exposition. In the film "The Last Lesson," the opening shot is a title which states that the story takes place in Alsace in 1873. This is clearly exposition of the most obvious sort.

"Commentary" refers to observations the author makes *about* the setting, characters, situations, or themes of the narrative. He may comment on their significance, causes, or general application. Asheim defines it as "those passages of philosophical, moral, social, or psychological interpretation which occur in the nature of an 'aside,' usually spoken in the person of the narrator himself."[1] For example, in "The Last Lesson" Franz's reflections on what the departure of the schoolmaster will mean to the community and to Hamel himself have been classified as commentary. The translation of commentary into the film mode of narrative is one of the greatest problems of a film maker. An example of how it can be done is provided by the film "The Cop and the Anthem," in which the views about charity organizations expressed in the short story directly by O. Henry have been put into a piece of dialogue spoken by Soapy.

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[1] Lester Asheim, "From Book to Film," (unpublished Doctor's thesis, The University of Chicago, Chicago, 1949).

"Transition" refers to passages which serve to move the action from one incident to the next. In "The Last Lesson" Daudet moves from Franz's reflections to the next incident in the classroom with this sentence, "I was busied with these reflections when I heard my name called." In the film "The Tell-Tale Heart" the camera focuses on a tapestry which the old man has pulled down in his death struggle. There is a fade-out, and then a fade-in to the next shot showing the tapestry back in place on the wall. This is a clear example of a transition sequence to indicate the passage of time.

One must point out that the distinctions among "exposition," "commentary," and "transition" are not clear-cut. Two persons analyzing the same story are likely to disagree as to whether to call a particular passage "exposition" or "commentary" or "transition," for such judgments are somewhat subjective and somewhat arbitrary. The investigator has, therefore, grouped all three as one major element of a story, since they share the common characteristic of being background for and supplementary to the major plot incidents.

## Comparison of Story and Film

The tables of comparison and discussions of differences between the short stories and the motion pictures follow.

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[1] *Ibid.*, p. 44.

## "The Cop and the Anthem"

### TABLE II

### Comparison of Story and Film

| Content Elements | Percentages[1] |  | Deviations |
|---|---|---|---|
|  | Story | Film |  |
| Exposition, Commentary, Transition | 25.5 | 29.2 | 3.7 |
| Major Plot Incidents |  |  |  |
| Cafe . . . . . . . . . . . . . | 12.1 | 24.1[2] | 4.3[3] |
| Window breaking . . . . . . . . | 6.0 | 4.4 | 1.6 |
| Restaurant . . . . . . . . . . | 7.7 | — | — |
| Accosting woman . . . . . . . . | 16.2 | 8.8 | 7.4 |
| Disorderly conduct . . . . . . | 6.0 | 0.0 | 6.0 |
| Umbrella . . . . . . . . . . . | 8.5 | 4.3 | 4.2 |
| Church . . . . . . . . . . . . | 16.2 | 22.2 | 6.0 |
| Court . . . . . . . . . . . . | .8 | 4.8 | 4.0 |
| Additional Incidents in Film |  |  |  |
| Attempt to kick cop . . . . . | 0.0 | 2.3 | 2.3 |
| Deviation Index (total deviations) |  |  | 39.5 |

1. Because of rounding decimals, totals of percentages do not always equal 100.

2. Cafe and restaurant incidents combined into one.

3. Arrived at by adding percentage for restaurant incident in story (7.7) to percentage for cafe incident in story (12.1) before subtracting.

The deviation index for "The Cop and the Anthem" is the smallest of all the stories, which means it is most faithful to the original in quantitative aspects. The film is also quite faithful to the ironic tone of O. Henry's tale and even adds a few ironic twists of its own. However, although seven of the eight major plot incidents are retained in the motion picture, the order in which they occur has been changed. The sequence of events in the story is as listed in Table II, page 28. The sequence of events in the film is as follows; umbrella, cafe-restaurent, attempt to kick copy, window breaking, accosting woman, church, court. The umbrella in the film becomes a symbol of Soapy's futility and accompanies him in each of his successive attempts to get himself arrested. When he finally gets rid of it - by giving it to the young woman whome he accosted, not by throwing it away as in the short story - , he thus symbolises the beginning of his resolution to change his ways.

The character of Soapy as a rather special kind of vagrant is emphasized in the film. A new character is introduced in the person of Horace, a more conventional type of tramp in speech, dress, and attitude, who serves as a foil to emphasize Soapy's hauteur and gentility and also as the partner in the dialogue used to bring into the film observations which O. Henry makes as direct exposition or commentary. The final incident in the court is given six times as much space in the film as in the short story. The judge, a disembodied voice in the story, appears on the screen as a pinch-faced, hard-looking individual whose uneven-handed administration of justice is a fitting climax to the series of ironic frustrations that has been Soapy's lot.

The film versions of the two O. Henrystories begin with the same introductory sequence, which presents some biographical information about O. Henry and comments by John Steinbeck. The analyses represented by the tables of comparison are based upon the stories only and do not include the introductory material.

## "The Last Leaf"

### TABLE VII

Comparison of Story and Film

| Content Elements | Percentages | | Deviations |
|---|---|---|---|
| | Story | Film | |
| Exposition, Commentary, Transition | 27.1 | 8.9 | 18.2 |
| Major Plot Incidents | | | |
| Doctor's diagnosis and subsequent visits . . . . . . . | 10.0 | 7.6 | 2.4 |
| Johnny's identification of self with leaf . . . . . . | 23.0 | 11.5 | 11.5 |
| Appeal to Behrman . . . . . . | 13.3 | 24.3 | 11.0 |
| Persistence of leaf . . . . . | 12.5 | 6.1 | 6.4 |
| Johnny's recovery . . . . . . | 7.1 | 9.9 | 2.8 |
| Behrman's self-sacrifice . . | 7.5 | 12.9 | 5.4 |
| Additional Incidents in Film | | | |
| Behrman's calls at pharmacy and art dealer's . . . . . . . | 0.0 | 17.4 | 17.4 |
| Deviation Index (total deviations) | | | 75.1 |

There are a number of minor differences between the story and the film which are not reflected in the table of comparison. The time of the story is fall; of the film, winter. In the story Joanna and Susan are friends; in the film they are sisters. Joanna, who is referred to as "Johnsy" in the story, is named "Joan" in the film. Behrman is depicted with a German accent in the story; in the film he has a Russian accent.

A major difference, however, lies in the shifting of what Brooks and Warren[1] call the focus of character. If one applies the question, "Whose story is it?" to the piece that O. Henry wrote, the answer is, "The girls'." Applying the same question to the motion picture, the answer is, "Behrman's." Behrman appears in the very first sequence of the film, and also appears in person or is mentioned in almost every other sequence, whereas he is not mentioned until about halfway through the prose text. An entirely new incident is added to the film, in which the irascible old artist sells his painting at a demeaning price in order to pay for the medicine Joan needs. The table of comparison shows that more than fifty per cent of the picture is devoted to incidents in which Behrman is the dominant character; in the story he is dominant in incidents which account for only twenty per cent of the whole.

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[1] Cleanth Brooks and Robert Penn Warren, Understanding Fiction

## "The Last Lesson"

### TABLE IV

### Comparison of Story and Film

| Content Elements | Percentages |  | Deviations |
|---|---|---|---|
|  | Story | Film |  |
| Exposition, Commentary, Transition | 23.7 | 5.8 | 17.9 |
| Major Plot Incidents |  |  |  |
| In the village square . . . . . . | 7.2 | 8.7 | 1.5 |
| Entering the class . . . . . . . | 7.8 | 4.4 | 3.4 |
| Noting differences in class . . | 8.3 | 6.7 | 1.6 |
| Hamel's announcement. . . . . . | 11.3 | 7.5 | 3.8 |
| Franz's recitation . . . . . . | 3.9 | 9.2 | 5.3 |
| Hamel's comments . . . . . . . . | 13.6 | 27.6 | 14.0 |
| Lessons . . . . . . . . . . . . | 16.9 | 7.5 | 9.4 |
| End of class. . . . . . . . . . | 8.3 | 5.1 | 3.2 |
| Additional Incidents in Film |  |  |  |
| Appearance of the Prussians . . | 0.0 | 18.1 | 18.1 |
| Deviation Index (total deviations |  |  | 78.2 |

The film version of "The Last Lesson," made during World War II, shows evidence of the probable intention of the producer to turn out a propaganda film. The elements of the story that tend to create sympathy for the French and animosity toward the Prussians have been heightened in intensity. The very names of the characters have been Frenchified: "Franz" becomes "Francois"; "Wachter" becomes "Victor." "The Marseillaise" is used extensively, not only as background music, but also as part of the action in the story. In the text, the schoolroom is described as being in "deep silence" when Franz enters; in the film, he enters while the children are singing the French national anthem. There is no hint in the motion picture of the fact that the Prussians held a certain attraction for Franz as indicated by the temptation to "cut" school to watch them drilling in the meadow behind the sawmill. To wring out a few extra ounces of sentiment, Franz's thought when he hears the pigeons, "And must they also be compelled to sing in German?", is put into the mouth of one of the younger children.

Hamel's remarks to the pupils and the villagers are expanded in the movie to include his reading a selection from Victor Hugo on the importance of preserving their language and retaining the spirit of freedom. This again is heightening of the patriotic theme, for in Daudet's story the only reading the master does is from a grammar.

Daudet ends his story with the poignant picture of Hamel, choked with emotion, head resting against the wall, dismissing the class with a gesture of his hand. There is no confrontation with the German master, who is to arrive the next day. The motion picture, however, does provide a confrontation. The new teacher arrives, accompanied by a Prussian officer, complete with handle-bar mustache and spiked helmet. When Hamel spots him in the doorway, he writes "VIVE LA FRANCE" on the blackboard. The German teacher goes to the board and erases the slogan while Hamel walks slowly through the class to the door, giving Francois the book by Hugo from which he had read the passage about libery. The film closes with the camera focusing on Francois, clutching the book, his face registering his determination to resist the enemy.

Another major difference between the story and film is in the narrative point of view. "The Last Lesson" as a short story, is told in the first-person, an approach which is very seldom used in a film. The change to third person point of view means the loss in the film of Franz's reflections and comments on the significance of the events that are taking place.

## "The Tell-Tale Heart"

### TABLE VI

Comparison of Story and Film

| Content Elements | Percentages | | Deviations |
|---|---|---|---|
| | Story | Film | |
| Exposition, Commentary, Transition | 3.5 | 1.7 | 1.8 |
| Major Plot Incidents | | | |
| Motivation of crime . . . . . . . | 5.1 | 0.0[1] | 5.1 |
| Preparation . . . . . . . . . . . | 13.8 | 11.5 | 2.3 |
| The murder . . . . . . . . . . . | 44.3 | 15.1 | 29.2 |
| Disposition of body . . . . . . . | 6.1 | 0.0 | 6.1 |
| Police visit. . . . . . . . . . . | 11.2 | 11.5 | .3 |
| Confession . . . . . . . . . . . | 16.3 | 32.1 | 15.8 |
| Additional Incidents in Film | | | |
| Motivation of crime[1] | 0.0 | 13.4 | 13.4 |
| The morning after | 0.0 | 11.1 | 11.1 |
| Post confession | 0.0 | 1.6 | 1.6 |
| Deviation Index (total deviation) | | | 86.7 |

1. The motivation of the crime is so different in the film that it must be regarded as an additional incident.

The tables of comparison show that, of the four films used in the experiment, "The Tell-Tale Heart" deviates most from its literary source. The differences derive mainly from a change in the motivation of the crime, the smaller proportion of the content devoted to the details of the actual murder, and the addition of several incidents.

Poe's tale is a study of the mentality of a madman. The insane state of the protagonist is established early in the story when he describes his motive. He denies passion, revenge, desire for gold, or hatred as motives; instead he names the old man's "vulture eye" as the inciting factor. The motivation is not only entirely psychological, but of such a nature as to require the presence of a diseased mind to make it credible to the reader.

In the motion picture, however, the motive is based upon a more normal situation; the desire of person to rid himself of a cruel and tyrannical master. The film opens with the young man working at a loom, apprehensively awaiting the entry of his master, whose footsteps he hears upon the stairs. The old man enters, slaps the boy for having complained to the neighbors, and taunts him for being a weakling and a coward. The master inadvertently suggests murder as the boy's only way out of his situation by ending his tirade with, "You'll be dependent on me as long as I live." Here is provocation enough; nor does it need explaining in terms of some bizarrely abnormal psychological state.

The film episode described above represents a change not only in the motive for the crime, but also in the relationship between the murderer and his victim. In the short story the murderer says, "I loved the old man. He had never wronged me. He had never given insult." The situation depicted in the picture is the reverse; he hated the old man; the old man had constantly wronged him and given him insult.

After the murder, the story advances swiftly to the conclusion without any lapse of time between events. The murderer has scarcely finished disposing of the victim's body when the police arrive at four o'clock in the morning.

In the film, however, the police do not arrive until much later in the morning, in full day. The disposal of the body has been omitted and a new incident inserted, opening with a shot of the young weaver asleep on a chair. He awakens to a thumping sound which, as represented by a double exposure shot, he recognizes as similar to the sound he had heard when he had pressed his ear against the victim's breast to make certain he was dead. He looks about the room, trying to find some other source; a dripping faucet, a ticking clock, a dripping rain spout. As the pounding increases in intensity even after he has silenced the other possible sources, he realizes that it is the sound of the old man's heart that he is hearing; and the camera follows his horrified gaze to a spot on the floor. The murderer collapses and the beating stops.

The movie also includes a denouement, which marks a deviation from the story as Poe wrote it. After the confession of the deed, the film shows the police officers lifting the floor planks. We then see the murderer being led away; the sound of the beating heart has stopped, and there is a look of serenity on his face.

Another important difference between the film and prose versions of "The Tell-Tale Heart" is a change in the narrative point of view. The first person point of view Poe uses has been changed to third person, which is better suited to the motion picture medium. As a result, the presentation of the murderer's inner state and emotions, so prominent in the original, is almost entirely absent from the screen adaption. This explains the great difference in the space given to the actual murder in the two versions: 44.3 per cent for the story as against 15.1 per cent for the film. The movie presents only the overt action; in the story we share the fiendish delight of the madman as he psychologically tortures his victim before dispatching him.

## Summary

The availability of films was a much more limiting factor in selecting materials for the experiment than was the availability of suitable short stories. Four stories were chosen: "The Cop and the Anthem" and "The Last Leaf" by O. Henry, "The Tell-Tale Heart" by Poe, and "The Last Lesson" by Daudet. The texts of the stories were reproduced in a uniform format to facilitate handling of materials and to remove differences in typography as a factor which might influence response.

Comparative analyses of the content of the stories and their film versions were made to determine the faithfulness of the latter to their literary sources. A table of comparison for each story-film was developed, in which the percentage of the total production devoted to each of the major elements is indicated. The differences in the percentages given the same element by the story and the film is entered as a deviation. The sum of the deviations is the film's deviation index. Based upon the deviation indexes, the films rank in the following order, starting with the most faithful: "The Cop and the Anthem" (39.5), "The Last Leaf" (75.1), "The Last Lesson" (78.2), "The Tell-Tale Heart" (86.7) A discussion of qualitative differences not brought out by the tables of comparison is also presented as part of the analysis.

# CHAPTER IV

## PREPARATION OF MATERIALS - THE TESTS

In Chapter III the selection and preparation of the stories and films used as the stimuli, the independent variables, were described. In this chapter the development of the instrumentfor measuring response, the dependent variable, will be discussed. The instrument was a series of multiple-choice tests based on the short stories.

### Determining Objectives

The first step in the construction of a test, it is generally agreed, is "the statement of the objectives or group of objectives at which the evaluation device is aimed."[1] It has also been frequently noted that in the field of literature the determining of objectives for testing is a difficult matter. As Pooley points out in explaining why this area is illuminated by relatively few strictly controlled research efforts," . . . there is a decided lack of agreement, in practice at least, regarding the desired outcomes of literature study."[2] What are we trying to do when we "teach" a short story? What do we expect to happen to a student when he reads a story? What is the nature of the experience to which the term "response" points? What meanings shall we ascribe to "appreciation," "comprehension," "interpretation," and "enjoyment" - concepts which are included in "response" - when we attempt to measure them? Theses are moot areas, which must be clarified before we can advance beyond even the first step in test construction. The matter is so crucial that it has been named specifically as a sub-problem that must be resolved in order to attain the overall purpose of the investigation.

To select those aspects of narrative art to which the students are expected to respond, the investigator used insights provided by three sources. One was the writings of critics and authors on the nature and art of fiction in general and of the short story in particular. A test on works of a certain type must be appropriate to the nature of that particular literary form. Insofar as certain basic elements have been distinguished in those pieces of writing called short stories, awareness of those elements becomes an essential objective of testing.

Short story collections and general anthologies with short stories in them, especially those published as texts for literature classes in secondary schools and colleges, were another source from which to draw objectives. They usually contain critical introductions in which the nature of the short story, "How to Read a Short Story,"[1] and similar topics are treated. Teachers' manuals which sometimes accompany the texts further expound the objectives of teaching the short story. Furthermore, specific questions on the stories demonstrate how the general objectives can be translated into specific situations for gauging students' responses and give the test-maker valuable hints on developing items for his own test.

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[1] H.H. Remmers and N.L. Gage, Educational Measurement and Evaluation, p. 52.

[2] R.C. Pooley, "Literature," Encyclopedia of Educational Research, 1950 edition, p. 756.

A third source of objectives used by the investigator was the work done by previous experimenters and test-makers in the field. As has been indicated in Chapter II, investigators of response to literature as well as experts in the field of reading have wrestled with the problem of definition of "appreciation," "enjoyment," "comprehension," and other types of reaction to literature and have distinguished certain basic behaviors, skills, and abilities by which response is manifested and can be measured. The work of these earlier students of the problem provided a valuable basis from which the present study proceeded.

Finally, it must be recognized that the investigator drew upon his own insights as an experienced teacher of English and as a student of literature. Having dealt with short stories in classes in secondary schools for more than fifteen years, he had considerable experience in, consciously or unconsiously, defining and applying objectives. What he was seeking in the sources described in the preceding paragraphs was a sharpening of concepts and a determination of the concensus of informed opinion in these matters, rather than the discovery of novel theories of the nature of fiction and response.

## The Nature of Fiction and the Short Story

E. M. Forster suggests an approach to the definition of the nature of fiction when he writes, "Our easiest approach to a definition of any aspect of fiction is always by considering the sort of demand it makes on the reader. Curiosity for the story, human feelings and a sense of values for the characters, intelligence and memory for the plot."[2] Similarly, the reader makes "demands" on the piece of writing labeled "fiction;" he approaches it with certain legitimate expectations derived from the very nature of the literary form. Thus, a measure of response is the extent to which the reader finds his expectations realized by the work.

What, then, are the demands or expectations with which a reader should approach a piece of fiction?

"The first demand a reader should make of a novel is that it should entertain him," says Somerset Maugham.[1] In this he is repeating sentiments that Henry James expressed much earlier when he wrote, "The only obligation to which in advance we may hold a novel, without incurring the accusation of being arbitrary, is that it be interesting. . . . Naturally I do not mean that we are bound to like it or find it interesting: in case we do not our course is perfectly simple - to let it alone."[2] Thus, we may say that the degree of enjoyment experienced by the reader is one of the objectives of a test of response to fiction since enjoyment is an appropriate expectation with which he comes to the work.

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[1] e.g. Wilbur Schramm, ed., Great Short Stories, pp. 28-42.

[2] Aspects of the Novel, pp. 107-108.

The pleasure a reader expects from a piece of fiction results from his participation in an imagined experience - imagined first by the author and then by the reader - which, entering his mind bit by bit in some sort of chronological sequence, creates an illusion of reality. As Goodman states it:

> In fiction, the half-forgotten assumption, easily enough remembered at need, is that the subject matter of the experience, regardless of any resemblance or lack of resemblance to what we regard as actuality, is not only being imagined by the reader, but is being imagined by him because it was imagined by an author.[3]
>
> Now, this making of experience in myself is what I mean by the word imagination. . . . A story conjured up in consciousness, then, should hold us as complusively as the most fascinating reality in the world, when we are interested beyond the slightest awareness in our interest. . . . In a moment of imaginative experience, I am helpless to question.[4]

However, the imagined world into which fiction conveys the reader differs significantly from the world as he experiences it directly. The events portrayed have a logic, a unity, a completeness of which he is aware in the real world only in moments of philosophic detachment. The novel or short story shows him beginnings and ends, events and antecedents, causes and effects, all more highly organized and apparent than is usually possible when he contemplates directly the hurly-burly of existence. Furthermore, the reader gets a more penetrating insight into what Forster calls the "hidden life" of people. As he explains it:

> In daily life we never understand each other, neither

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[1] "Introduction," Tellers of Tales, p. xxix.

[2] "The Art of Fiction," in M. Schorer, J. Miles, and G. McKenzie Criticism, pp.47,50.

[3] Theodore Goodman, The Techniques of Fiction, p. 19.

[4] Ibid., pp. 24-25.

> complete clairvoyance nor complete confessional exist. . . . But people in a novel can be understood completely by the reader, if the novelist wishes; their inner as well as their outer life can be exposed. And this is why they often seem more definite than characters in history, or even our own friends; . . . even if they are imperfect or unreal they do not contain any secrets, whereas our friends do and must, mutual secrecy being one of the conditions of life on this globe.[1]

Thus, another objective in measuring response to short stories suggested by the nature of fiction is the extent to which the reader enters into the lives of the characters in the imagined world and, further, comprehends the underlying meaning or significance of the experience.

Certain basic elements of narrative whereby the writer creates his imagined world have been distinguished by critics. Some, like Bliss Perry,[2] name as few as three: the characters, the plot, and the setting; other, like Theodore Goodman,[3] name as many as seven: the word, imagery, character, pattern, emotion, idea, and conflict. Bement[4] mentions four: plot, character, setting, and theme; while Adler[5] and Brooks and Warren,[6] though using somewhat different terms, agree on plot, character, and theme as the principal elements of narrative. It is sufficient for the present study to note that setting, plot, character, and theme are generally regarded as the fundamental aspects of a piece of fiction and that, therefore, awareness of them in a particular short story becomes an appropriate objective in the measurement of response.

## Textbook Anthologies and Short Story Collections

Dozens of anthologies and short story collections for use as textbooks have been published. In a survey published in 1957 Beebe noted " there are about forty textbook anthologies of the short story currently available,"[1] and he was referring only to college level materials. Most of the textbook anthologies include critical introductions which discuss the nature of fiction and the short story and how to respond properly to a short story. In general, they develop the same points mentioned in the preceding paragraph but amplify their analyses by specific references to the problem of the reader. For example, Brooks and Warren in Understanding Fiction, which Beebe refers to as "the model for practically all critical readers since 1943,"[2] translate their critical theory into the following series of questions a reader should ask while reading a story:

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[1] Forster, _op. cit._, p. 47.

[2] _A Study of Prose Fiction_.

[3] _The Techniques of Fiction_.

[4] Douglas Bement, _Weaving the Short Story_.

[5] Mortimer Adler, _Art and Prudence_.

[6] Cleanth Brooks and Robert Penn Warren, _Understanding Fiction_.

1. What are the characters like?
2. Are they "real"?
3. What do they want? (motivation)
4. Why do they do what they do? (motivation)
5. Do their actions logically follow their natures? (consistency of character)
6. What do their actions tell about their characters?
7. How are the individual pieces of action - the special incidents - related to each other? (plot organization)
8. How are the characters related to each other? (subordination and emphasis among characters; conflict among characters)
9. What is the theme?
10. How are the characters and incidents related to the theme?[3]

Similarly, a teachers' guidebook for a ninth grade anthology includes the following among the skills involved in the interpretation of literature:

> The ability to understand traits and motives of characters
> The ability to understand the author's method of narrating a story
> The ability to interpret a story theme
> The ability to identify the elements of a short story
> . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
> The ability to make inferences
> The ability to relate literature to life
> . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
> The ability to recognize the author's purpose and understand his attitude[4]

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[1] Maurice Beebe, "A Survey of Short-Story Textbooks," National Council of Teachers of English, Essays in American Literature, reprinted from College English, (January, 1957) p. 48

[2] Ibid., p. 54.

[3] Brooks and Warren, op. cit., p. 28.

[4] Robert C. Pooley and others, Guidebook to Good Times Through Literature, pp. 3, 23, 133.

For each of the abilities mentioned, the guidebook also gives a question the students should keep in mind as they read in order to establish the reading skill.

Thus, among the objectives of measurement for a test of response to short stories are the behaviors, skills, and abilities suggested by lists cited above - and comparable lists can be culled from any number of short story textbooks and guidebooks. What we are attempting to do when we "teach" short stories is to help students acquire and apply the abilities mentioned by Pooley and his co-authors in order to answer the type of questions asked by Brooks and Warren.

## Previous Work in the Field

A third source upon which the investigator drew in defining the objectives of his tests was the work done by experts in the field of reading and by previous experimenters in measuring response to literature. Although most of these studies were concerned with all forms of literature: poetry as well as prose, non-fiction as well as fiction, novels as well as short stories, their specifications of the objectives of measurement were an invaluable aid in determining appropriate objectives for the present experiment.

Nine groups of skills deemed most essential for comprehension of reading were arrived at by Davis[1] as a result of his survey of the work published by experts in the field. He lists the following as the fundamental factors in reading comprehension.

1. Knowledge of word meaning
2. Ability to select appropriate meaning for a word or phrase in the light of its particular contextual setting
3. Ability to follow the organization of a passage and to identify antecedents and references in it
4. Ability to select the main thought of a passage
5. Ability to answer questions that are specifically answered in a passage
6. Ability to answer questions that are answered in a passage but not in words in which the question is asked
7. Ability to draw inferences from a passage about its contents
8. Ability to recognize the literary devices used in a passage and to determine its tone and mood
9. Ability to determine the writer's purpose, intent, and point of view, i.e. to draw inferences about the writer[2]

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[1] Frederick B. Davis, "Fundamental Factors in Reading Comprehension," Psychometrika, IX (September, 1944), p. 185-197.

[2] Ibid., p. 186.

Davis further designates word knowledge and reasoning, by which he means the ability to see relationships and to draw inferences, as the two general skills basic to the measurement of the others.

A survey by Smith,[1] similar to Davis's but limited to the appreciation of literature, is reported by Harris.[2] Smith listed sixty-eight factors involved in learning to appreciate literature; but Harris, after eliminating those relating to the teaching environment and to the condition of the reader himself, reduces them to four. He says:

> This analysis of Mrs. Smith's study indicates that a definition of literary appreciation derived from her list of "factors" would include two responses, namely, enjoyment and self-identification; and two basic abilities, namely, the ability to comprehend or understand, and the ability to recognize the characteristics of good and poor literature.[3]

Harris himself lists the following five behaviors (items 1 through 5) and three abilities (items 6 through 8) as the basic objectives of measurement of literary appreciation:

1. Enjoying or liking literature
2. Identifying one's self with the events, characters, mood, and so on of the literary selections
3. Appraising or evaluating literature
4. Becoming curious about literature that is read
5. Expressing one's self creatively (that is, in various media) as a result of reading literature
6. Comprehension of literature
7. Discrimination among various literary selections with respect to their literary value or values
8. Recognition of the distinguishing characteristics of superior literature.[4]

He concerned himself only with enjoyment and comprehension in developing his tests, however. "Enjoyment" he defines as "satisfaction in the reading . . . as evidenced by a desire on the part of the student to read more of that kind of passage."[1] "Comprehension" includes four kinds of operations: (1) translating - getting the literal meaning; (2) summarizing ideas and characteristics of persons; (3) inferring the tone, mood, and intent; and (4) relating technique and meaning - being aware of style and literary devices.

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[1] Johnnie R. Smith, "An Analytical Study of the Factors Involved in Learning to Appreciate Literature," in Indiana University, Twentieth Annual Conference on Educational Measurements. Bulletin of the School of Education, Vol. X, No. 1. Bloomington, Indiana: Indiana University, 1933.

[2] Chester W. Harris, "The Measurement of Comprehension of Literature and Its Relation to Enjoyment" (unpublished Doctor's thesis, The University of Chicago, Chicago, 1946)

[3] Ibid., p. 23.

[4] Ibid., p. 125.

White[2] also was concerned with the problem of defining response to literature in terms of objectives which could form the basis for a test. Her formulation includes the following major objectives for the reading and interpretation of literature:

> I. The student supplies previously acquired knowledges, skills, and abilities to a more complete understanding of his reading.
> II. The student gets the "plain sense" of the material he is reading.
> III. The student reads critically.
> IV. The student goes beyond the written word.
> V. The student reacts to his reading emotionally and imaginatively.
> VI. He incorporates the manifold results of reading into his behavior so that they contribute to his own personal development.
> VII. The student becomes acquainted with an increasing number of books and authors that have made and are making significant contributions to our culture.[3]

Each of these is broken down into more specific behavioral outcomes, resulting in sixty-two in all. These include a variety of skills and abilities, such as, knowledge of vocabulary, knowledge of characteristics of different types of writing, ability to discriminate between the good and the less good, interpreting implications, predicting future actions of characters, entering vicariously into the literary situation, recognition of tone and mood, and developing sensitivity to man and society. In constructing her test, however, White made no attempt to make each test item purely the measure of one ability. Rather, she recognized the interaction and interdependence of a number of abilities in the response to any given selection.

Additional lists similar to those given above could be cited from the works of other reading experts and authors of literature tests. These, however, would add no new insights, for it is already apparent that there is general agreement about the general objectives of a test designed to measure response to literature. The specifications set up by Davis, White, and Harris are largely interchangeable, although their wording differs, and any one of the lists could be accepted as a valid statement of objectives. Furthermore, they include the behaviors, understandings, and abilities which the investigator had noted earlier in writings on the art of fiction and in literature textbooks. He had now reached the point where he was ready to designate the specific objectives for the tests to be used in his experiment.

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[1] Ibid., p. 60.

[2] Verna White, "The Construction of a Test for High School Students in the Reading and Interpretation of Literature" (unpublished Doctor's thesis, The University of Chicago, Chicago, 1945).

[3] Ibid., pp. 44-47.

## The Specific Objectives

The measurement of comprehension is the major objective of the tests, with twenty-eight of the thirty-nine items in each test devoted to this aspect of response. Comprehension is defined to include the following behaviors and abilities.

1. Recalling the gross facts of the narrative
2. Grasping meanings inherent in the writing but not overtly stated
3. Understanding motivation of character
4. Recognizing underlying ideas or themes
5. Discerning the setting of a story
6. Being aware of elements of narrative structure

Dealing with junior high school students, the investigator discovered that he had a special problem in getting at the last of the behaviors listed above. A considerable portion of the works dealing with the nature of fiction and the short story is devoted to what Brooks and Warren call "technical problems,"[1] such matters as atmosphere, climax, focus of character, narrative point of view, exposition, etc. A number of texts include glossaries of technical terms used to discuss fiction, and questions are often phrased in terms that presuppose the student's knowledge of this critical structure and terminology, a supposition that might be untenable for the students involved in the present experiment. For example, asking a student about "irony" in a story is as much a test of his knowledge of the very term itself as it is of his ability to apply the concept to a particular story.

In order to determine the extent to which he could include knowledge of narrative structure and literary devices and the technical terms used to refer to them, about six months before the experiment the investigator administered a brief matching test covering the following terms which he had frequently encountered in critical works: climax, atmosphere, characterization, foreshadowing, realistic, plot, irony, sentimental, conflict, dialogue, suspense, style, theme, motivation, surprise ending, credibility, exposition, setting, and chronological. The results of this test showed that the investigator could use none of these terms, for none was universally known among the students to be involved in the experiment. Consequently, he included very few items aimed specifically at awareness of elements of narrative structure, and these he framed without using technical terms.

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[1] Brooks and Warren, Understanding Fiction, Appendix, pp. 569-600.

Three other types of response were selected as objectives of the tests: (1) enjoyment, (2) identification with characters, and (3) knowledge of words as used in the stories.

"Enjoyment" is defined as Harris[1] defined it in developing his tests on the enjoyment and comprehension of literature: satisfaction in the reading as shown by the desire to read more of the same kind of story. This objective might just as well have been referred to as "interest in further reading." Harris had also discovered that "a simple questionnaire technique can be used to measure students' liking for or enjoyment of their reading,"[2] and he used only one question, "Would you enjoy reading more of this selection?" to measure this aspect of response.

A particularly appropriate definition of "identification" is given by Maccoby and Wilson in their report of their experiment to determine the relationship between what junior high students learned from film narratives and the characters with whom they identified.[3] Their definition, which follows, although expressed in terms of dramatic productions, applies equally to other media of literature:

> We assume that when a viewer becomes absorbed in a dramatic production, he *identifies* himself, at least momentarily, with one or more of the characters. By identification we mean that the viewer, in fantasy, puts himself in the place of a character and momentarily feels that what is happening to that character is happening to himself. In this process, we assume that . . . he does reproduce covertly many elements of the behavior including the *emotions* he attributes to the character, so that when the character with whom he identifies himself is in a dangerous situation, for example, the viewer feels fear, and when the character escapes danger, the viewer feels vicarious relief.[4]

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[1] Chester W. Harris, "The Measurement of Comprehension of Literature and Its Relation to Enjoyment" (unpublished Doctor's thesis, The University of Chicago, Chicago, 1946).

[2] *Ibid*., p. 131.

[3] E. E. Maccoby and W. C. Wilson, "Identification and Observational Learning from Films", *The Journal of Abnormal and Social Psychology*, 55 (July, 1957), p. 76-87.

[4] *Ibid*., p. 76

The investigator modeled his questions for measuring identification on those used by Maccoby and Wilson in their study.

## Apportionment of Test Items

The thirty-nine items scored in the final versions of the tests were apportioned among the four objectives as follows: enjoyment - three; identification - three; comprehension - twenty-eight; vocabulary - five.

Items pertaining to enjoyment and identification constitute Part I, which represents essentially a questionnaire technique since there are no "right" answers to these questions. The items pertaining to enjoyment are "Would you like to read more stories like this one?", "Would you like the library to get books with more stories like this one?", and "This story appears in a paperback collection that costs 35¢. Would you order a copy if you could?" Five options are offered for each question: (a) I definitely would, (b) I probably would, (c) I don't know, (d) I probably would not, (e) I definitely would not. Items used to measure identification are "Which character did you feel was most like you?", "Which character would you want to be like in real life?", and "Which character did you like best?" The choices offered for these items vary, of course, from story to story. Part I also includes several other items which were not considered in the present study but may be used in future investigations.

Items relating to comprehension and vocabulary make up Part II of the tests. With a few exceptions, each of these items has four options, with only one "correct" answer in each instance.

## Development of Final Form of Test Materials

The final form of the test materials was the result of two preliminary operations: the tryout of a preliminary version of the materials on a group of students similar to those who were to take part in the experiment and criticism of the preliminary versions by a group of experienced English teachers.

The tryout was done at Clinton Place Junior High School, Newark, New Jersey. This school is located seven blocks from Madison School and draws its students from a comparable socio-economic area. Seventy-six students took part in the tryout: twenty-two seventh graders, twenty-nine eighth graders, and twenty-five ninth graders.

The purpose of the tryout was to determine time limits of the final test form, to discover weaknesses in the mechanics of administration, and to provide data for the improvement of test items. A difficulty index was determined for each item in Part II, which covers comprehension and vocabulary. The discriminating power of each item was also examined by comparing the choice-by-choice responses of the high-scoring and low-scoring students. In light of the data yielded by these item analysis techniques, the items in the tryout versions of the tests were revised, eliminated, rearranged, added to, and otherwise changed as deemed desirable. The form used for making item analyses is shown in Appendix B.

Another source of revisions for the preliminary versions of the tests was criticisms of the proposed instrument by a number of teachers who, by virtue of training and experience, were presumed to be experts in the teaching of English. These evaluators were asked for suggestions and criticisms on areas covered by the following questions:

1. Are there ambiguities in the wording of the test items and answer choices?
2. Do you agree with my choice for the correct answers in Part II of each test?
3. Are there additional areas of response which junior high students can be expected to manifest and which can be measured by an objective test?
4. Can you suggest any other specific test items?
5. Is the format adequate

Fifteen experts participated in the evaluation. Their comments on specific items were entered on the backs of the cards on which the item analyses were done in order to bring together all data to be considered in revising test items.

The final versions of the tests are in Appendix A.

Unfortunately, there was no opportunity to try out the revised tests before using them in the experiment.

## Summary

The first step in the construction of the tests for the experiment was the setting up of objectives. These were determined on the basis of the nature of fiction and the short story as a literary form as expounded by literary critics; the nature of proper response to short stories as described in short story textbooks; and the abilities, skills, and behaviors identified by reading experts and previous constructors of literature tests as basic to response to literature. The investigator arrived at four aspects of response as the objectives for his test: (1) comprehension, (2) enjoyment, (3) identification with characters, and (4) knowledge of word meanings. Enjoyment and identification were included in Part I of the tests and were measured by a questionnaire technique. Comprehension and knowledge of vocabulary made up Part II of the tests, with twenty-eight and five multiple-choice items devoted, respectively, to each. The final version of the tests were based upon a tryout of preliminary versions on a group of students in a neighboring junior high school and upon criticisms made by fifteen expert teachers of literature.

# CHAPTER V

## PERFORMANCE OF THE EXPERIMENT: COLLECTING THE DATA

The selection and preparation of the materials have been discussed in Chapters III and IV. The next step was actually to perform the experiment: to take a group of students, expose them to the stories and films, and record their responses by means of the tests. This chapter describes the population who read the stories, saw the films, and took the tests. It also explains the administrative arrangements whereby the population and the materials were brought together.

### The Population

The population used in the experiment was made up of students of Madison School, Newark, New Jersey. The school is a combined elementary-junior high school, with about eight hundred students in the elementary division (kindergarten through grade six) and about four hundred in the junior high division (grades seven through nine). Each division has its own faculty and occupies a separate part of the building, although the same principal administers both. The investigator had taught in Madison Junior High School for five years and was serving as vice-principal at the time of the experiment.

Newark is the largest city in the state of New Jersey, a commercial and industrial center with a population of more than 400,000. Madison School is located in the southwestern part of the city in what is known as the Clinton Hill Section. This section at one time had been one of Newark's most substantial neighborhoods, and many prominent professional and business people in Newark and the surrounding area were graduated from Madison Junior High School. At the time of the experiment, however, the neighborhood was undergoing a change, with the more affluent families moving to the suburbs and being replaced by families from the poorer sections. As a result, the students who participated in the experiment represented a broad range of socio-economic, religious, and racial backgrounds.

All students in the junior high school division plus sixty-nine in the second term of the sixth grade[1] participated in the experiment, 462 in all. Of these, 245 were boys; 217 girls. The sixth graders were included in order to increase the population and to widen its age span, since age rather than grade was one of the organismic variables being considered.

The population included students with previous knowledge of the stories as well as those who encountered the stories for the first time in the experiment. Although the investigator had considered limiting himself to students with no previous knowledge of the stories, he abandoned this plan because to have done so would have so reduced the size of his population that the scope of his statistical inferences would have suffered severely. Furthermore, randomization assured that this element was operating uniformly throughout the groups and, hence, did not affect comparisons among them.

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[1] Newark was on semi-annual promotion at the time. It has since changed to annual promotion.

Grouping

The experiment called for the setting up of three groups on the basis of the stimulus variable; namely, method of exposure to the stories:

Group A - only read the stories

Group B - read the stories, then viewed the films

Group C - viewed the films, then read the stories

Group A was the control group, whose performance constituted the standard against which the responses of the film-viewing groups would be measured. Two film groups were set up to determine whether a change in the sequence of the reading and viewing would produce any differences in response.

The stimulus groups were equated precisely on the basis of sex and by randomization for other characteristics. Randomization was achieved by applying separately to the boys and to the girls a table of random numbers found in Lindquist's text on statistics.[1] The makeup of the groups was as shown below:

| | Boys | Girls | Total |
|---|---|---|---|
| Group A | 82 | 72 | 154 |
| Group B | 82 | 72 | 154 |
| Group C | 81 | 73 | 154 |
| | 245 | 217 | 462 |

For purposes of the statistical analysis, the subjects were further grouped on the basis of the organismic variables: sex, age, and I.Q. Three I.Q. groups were established on the basis of the ranked I.Q. scores of the population. Those in the top third were classified as "high I.Q.; those in the center third, "middle" I.Q.; and those in the bottom third, "low" I.Q. Three age groups were similarly formed and similarly designated "high," "middle," and "low." The characteristics and limits of the I.Q. and age groups are shown in Table VI.

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[1] E. H. Lindquist, Statistical Analysis in Educational Research, Table 18.

TABLE VI

Limits and Characteristics of I.Q. and Age Groups, Total Population

| | Limits | Mean | Median | Standard Deviation |
|---|---|---|---|---|
| I.Q. | | | | |
| High | 142-107 | 117.34 | 117 | 8.60 |
| Middle | 107-92 | 100.07 | 102 | 4.62 |
| Low | 92-67 | 83.13 | 82 | 6.49 |
| Age (years/months) | | | | |
| High | 17/0-14/5 | 15/0.8 | 14/10 | 0/5.34 |
| Middle | 14/5-13/1 | 13/8.3 | 13/8 | 0/4.94 |
| Low | 13/0-10/7 | 12/2.4 | 12/4 | 0/3.91 |

Another organismic variable, which, however, received only limited attention is the statistical analysis, was reading level. Here again the designations "high," "middle," and "low" were used. Students a year or more above grade in reading ability were considered in the "high" group; those a year or more below grade in reading ability were considered in the "low group; those whose reading ability lay between these extremes were considered in the "middle" group.

The data needed to make the organismic groupings were obtained from the students themselves in the case of age and from school records in the case of I.Q. and reading level. For sixth, seventh, and eighth grade students there were available scores on the Kuhlman-Anderson Intelligence Test, Form F,[1] and the Stanford Advanced Reading

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[1] Fred Kuhlman and Rose G. Anderson, Kuhlman-Anderson Intelligence Tests. New York: The Psychological Corporation, 1952.

Test: Form G,[1] which they had taken in the first term of the sixth grade as part of the regular city-wide testing program. For the ninth graders there were scores on the California Short-Form Test of Mental Maturity[2] and the California Reading Test,[3] which they had taken in the beginning of the first term of the ninth grade. The investigator administered the California Short-Form Test of Mental Maturity to students from whose records an I.Q. score was missing.

### Procedures in Performance of the Experiment

A week before the experiment began, the investigator met with the teachers and explained the procedures to be followed. Each teacher was given two lists: one of his homeroom students, on which had been noted the experimental group and room assignment of each student; the other of students whom he was to supervise during the proceedings.

The experiment was carried out on four successive Wednesdays in the spring of 1960, in ninety-minute periods from 9:30 until 11:00 A.M. Each day was given over to one story, starting with "The Last Lesson" and continuing, in order, with "The Last Leaf," "The Tell-Tale Heart," and "The Cop and the Anthem." The purpose of allowing a week to elapse between successive parts of the experiment was to mitigate the possible effect of the testing instrument itself upon response to the stories. It was felt that, having taken one test, the student might consciously or unconsciously condition his response to the next story in terms of the kind of question he had previously encountered. To the extent that this happens, the testing instrument is structuring response instead of merely measuring it.

At 9:30, subjects in Group A (only read) reported to their assigned rooms and remained there during the entire experimentation period. There they read the stories and took the tests.[4] Subjects in Group B (read, then viewed) also reported to assigned classrooms, where they filled out the headings of the answer sheets and read the stories.[5]

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[1] T. L. Kelley, G.M. Ruch, and L.M. Terman, Advanced Reading Test: Form G, Stanford Achievement Test. Yonkers-on-Hudson, New York: World Book Company, 1942.

[2] E. T. Sullivan, W.W. Clark, and E.W. Tiegs, California Short-Form Test of Mental Maturity, Junior High Level, Grades 7-8-9, 1957 S-Form. Lost Angeles: California Test Bureau, 1957.

[3] E. W. Tiegs and W. W. Clark, California Reading Test, Junior High Level, Grades 7-8-9, Form W. Los Angeles: California Test Bureau, 1957.

[4] See "Directions for Administrators - Group A" and "Directions for Students in Group A," Appendix C.

[5] See "Directions for Administrators - Group B" and "Directions for Students in Groups B and C," Appendix C.

Students in Group C (viewed, then read) reported to the auditorium, where they filled out the headings of the answer sheets and viewed the films.[1] The investigator, assisted by other teachers, personally was in charge of all the activity in the auditorium.

To complete the showing of a film to Group C took, on an average, thirty-five minutes, which, the tryout had demonstrated, was ample time for students in Group B to complete the reading of a story. At a prearranged signal these two groups changed places, Group B moving from the classrooms to the auditorium, Group C from the auditorium to the classrooms. In the auditorium, Group B saw the films and took the tests. In the classrooms, Group C read the stories and took the tests.

Efforts were made to insure that the responses of the students were entirely their own. To discourage cheating on the tests, the students were told that their scores would have no effect upon their marks in English or any other subjects. Teachers refrained from discussing the stories and all other types of teaching activity before administering the tests. Groups B and C presented a special problem in this regard, for while they were moving to or from the auditorium they had a chance to exchange ideas and impressions about what they had seen or read. To mitigate this situation, the importance of refraining from discussion was stressed and the groups moved by different routes.

## Scoring

All answer sheets were scored manually. Answer sheets upon which the statistical analysis was based were scored twice, by a different person each time, as a check for accuracy.

Twenty-five scores were determined for each student: an enjoyment score for each story, a total enjoyment score for all the stories, an identification score for each story, a total identification score for all the stories, a comprehension (Part II) score for each story, a total comprehension score for all the stories, a vocabulary score for each story, a total vocabulary score for all the stories, a total for each story, and a total for all the stories. The test scores for each student were recorded on the back of the card on which his personal data had been entered. The manner in which the cards had been prepared for the entry of the data is shown in Figure 1.

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[1] See "Directions for Administrators - Group C," Appendix C.

I. Q. Group ....... Age Group ....... Cell .......

| | Enjoy. | Ident. | Part II | Vocab. | Total |
|---|---|---|---|---|---|
| Last Lesson | | | | | |
| Last Leaf. | | | | | |
| Tell Tale Heart | | | | | |
| Cop. & Anthem | | | | | |
| Total | | | | | |

Figure 1. Form used for recording scores

The "enjoyment" score was based upon answers to questions 5 ("Would you like to read more stories like this one?"), 6 ("Would you like the library to get books with more stories like this one?"), and 7 ("This story appears in a paperback collection of similar stories that costs 35¢. Would you order a copy if you could?"). The scale of values assigned to the answer choices ran from four for choice a ("I definitely would.") to zero for choice e ("I definitely would not."), Thus, the highest possible enjoyment score for any story was twelve; the lowest, zero. However, in order not to give too much weight to the enjoyment factor in arriving at the total score for a story, the maximum value given to questions 5, 6, and 7 was one point for each, awarded for the choice of either a ("I definitely would.") or b ("I probably would.") as the student's answer.

The "identification" score was based on questions 9 ("Which character did you feel was most like you?"), 10 ("Which character would you want to be like in real life?"), and 11 ("Which character did you like best?"). In questions 9 and 10, any choice other than "none" gave the subject one point. In question 11, any answer other than "liked them all equally well" or "didn't like any of them" gave the subject one point. Thus, the maximum identification score for each story was three.

Part II of each test contained thirty-three items, of which twenty-eight related to comprehension and five to vocabulary. Each correct answer carried a value of one, with the total score in these areas based on the number right. No correction for guessing was applied.

Summary

The subjects used in the experiment were 462 students in Madison School, Newark, New Jersey. Of these, 245 were boys; 217 girls. All but sixty-nine were from the junior high division, grades seven through nine. Sixty-nine sixth-graders were included to increase the size and age range of the population. The population included students with previous knowledge of the stories as well as those who encountered the stories for the first time in the experiment.

On the basis of method of exposure to the stories, the stimulus variable, three groups were formed: Group A - only read; Group B - read, then viewed; Group C - viewed, then read. Group A was the control group. Two experimental groups were set up to determine the effect on response of a change in the viewing-reading sequence. The groups were equated precisely on the basis of sex and by randomization for other characteristics.

On the basis of the organismic variables of I.Q. and age, three groups were formed: "high," "middle," and "low." The limits of each group were determined by the rank order distribution of I.Q. scores and ages of the population. Those in the top third were classified as "high;" those in the center third as "middle;" those in the bottom third as "low." The medians of the I.Q. groups were, respectively, 117, 102, and 82. The medians of the age groups were, respectively, fourteen years, ten months; thirteen years, eight months; and twelve years, four months. "High," "middle," and "low" reading groups were also distinguished. Students a year or more above grade in reading ability were put into the "high" group; those a year or more below grade, into the "low" group; those who lay between these extremes, into the "middle" group. Data on all organismic variables except I.Q. and reading level were acquired directly from the students. I.Q. and reading scores were obtained from school records.

The performance of the experiment extended over a four-week period. A ninety-minute block of time on Wednesday morning of each week was used for experimenting. Each session was devoted to one story, starting with "The Last Lesson" and continuing with "The Last Leaf," "The Tell-Tale Heart," and " The Copy and the Anthem." Efforts were made to insure that the responses of the students were entirely their own, uninfluenced by discussion or any other type of teaching activity.

Samples of forms used for acquiring and recording data pertaining to the individual subjects are included as Appendix B. Samples of the instructions given to teachers who helped administer the tests and to the students in the various groups are in Appendix C.

# CHAPTER VI

## RESULTS

The results of the experimentation described in Chapter V will be presented in this chapter. First the statistical techniques and procedure used to analyze the data will be described. Then the statistical analysis will be interpreted in terms of the hypotheses the experiment was designed to test.

### Statistical Techniques and Procedure

The experiment involves four variables or *factors*: method of exposure to the stories, I.Q.,[1] age, and sex. The first three factors have been varied in three ways; the fourth, in two. Each of these variations of a factor will be referred to as a *level* of the factor. Thus, the experiment can be said to involve three three-level factors and one two-level factor, or a 3 x 3 x 3 x 2 factorial design. The four factors and their various levels combine to form fifty-four experimental conditions or *cells* as shown in Figure 2, page 57.

The statistical technique recognizes that factors often work in concert, that the effect of a particular variable may be dependent upon the presence or absence of some other factor operating at the same time. For example, seeing a film might improve the response of a low I.Q. student but might have no appreciable effect upon the response of a high I.Q. student. A technique for taking into account all the possible interactions of the factors in an experiment is the *analysis of variance*, the method of analysis used here. As Edwards explains, "In factorial experiment . . . we not only have information about the several variables, but also the interactions between the variables, since they are tested not only in isolation but in conjunction with the effects of other variables."[2]

When dealing with two-level factors, one need not carry the statistical analysis beyond the analysis of variance. When, however, three-level factors are involved, further analysis is required.

> Suppose we have tested a set of . . . means by the analysis of variance and have concluded that the means differ significantly. This alone . . . is not very satisfactory. What we would usually like to know is how the means differ. Is every mean significantly different from every other? Are there significant differences between some of the means and not between others?[3]

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[1] Reading level replaces I.Q. as a variable in one problem.

[2] Allen L. Edwards, *Experimental Design in Psychological Research*, 1950 edition, p. 233. Material in this chapter depends greatly upon this book and also the revised, 1960, edition.

[3] *Ibid*., p. 136.

| | | | | FACTOR A (method of exposure to story) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Level 1 (read only) | | Level 2 (read-viewed) | | Level 3 (viewed-read) | |
| FACTOR D (sex) | | | | Level 1 (male) | Level 2 (female) | Level 1 (male) | Level 2 (female) | Level 1 (male) | Level 2 (female) |
| FACTOR B (IQ) | Level 1 (high) | FACTOR C (age) | Level 1 (high) | | | | | | |
| | | | Level 2 (middle) | | | | | | |
| | | | Level 3 (low) | | | | | | |
| | Level 2 (middle) | FACTOR C (age) | Level 1 (high) | | | | | | |
| | | | Level 2 (middle) | | | | | | |
| | | | Level 3 (low) | | | | | | |
| | Level 3 (low) | FACTOR C (age) | Level 1 (high) | | | | | | |
| | | | Level 2 (middle) | | | | | | |
| | | | Level 3 (low) | | | | | | |

Figure 2. Combination of factors into cells for statistical analysis

Of the several techniques for making multiple comparisons among means which Edwards presents, Duncan's new multiple range test was chosen for the present investigation. This test requires the computation of shortest significant ranges to determine whether the differences between pairs of means are large enough to be significant. The shortest ranges are included in the tables of comparison of means, Tables IX through XI, pages 62 through 64.

## Application of Statistical Techniques

As indicated previously, the factorial design used to analyse the data involved fifty-four experimental conditions or cells. Four observations were used for each cell. Thus, of the 462 students who participated in the experiment, scores of only 216 were used in the statistical analysis. In cells where there were more than four observations, the four to be utilized in the analysis of variance were chosen at random.

Ten analyses of variance were made, each based upon a different set of test scores as indicated below:

Problem 1 - all four stories, all aspects of response

Problem 2 - "The Last Lesson" only, all aspects of response

Problem 3 - "The Last Leaf" only, all aspects of response

Problem 4 - "The Tell-Tale Heart" only, all aspects of response

Problem 5 - "The Copy and the Anthem" only, all aspects of response

Problem 6 - all stories, enjoyment aspect only

Problem 7 - all stories, identification aspect only

Problem 8 - all stories, comprehension aspect only

Problem 9 - all stories, vocabulary only

Problem 10- all stories, all aspects of response, reading level used instead of I.Q. as a variable.

The .05 significance level was used in determining the significance of *F* ratios and differences between means.

The means for each level of each factor in each problem are shown in Table VII, page 60. The significant factors and interactions are indicated in Table VIII, page 61, and detailed summaries of the individual analyses of variance are presented in Appendix D, pages 153 through 162. The comparisons of means by application of Duncan's test are shown in Tables IX through XI, pages 62 through 64.

The following code is used in the tables to indicate the various factors and their levels:

Factor A - method of exposure to story

Level 1 - only read

Level 2 - read, then viewed

Level 3 - viewed, then read

Factor B - I.Q. (reading level in problem 10)

Level 1 - high

Level 2 - middle

Level 3 - low

Factor C - Age

Level 1 - high

Level 2 - middle

Level 3 - low

Factor D - sex

Level 1 - male

Level 2 - female

## TABLE VII

### Means for All Factors, All Levels

| Problem | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Factor A: Method | | | | | | | | | | | |
| Read only | 94.0 | 25.4 | 24.0 | 24.0 | 20.4 | 30.0 | 4.5 | 72.3 | 10.5 | 94.8 | A1 |
| Read-view | 99.0 | 26.7 | 26.4 | 23.3 | 22.6 | 34.0 | 4.5 | 76.2 | 09.9 | 100.1 | A2 |
| View-read | 102.3 | 27.1 | 27.6 | 24.6 | 22.9 | 34.0 | 4.5 | 78.4 | 10.9 | 101.9 | A3 |
| Factor B: I.Q.* | | | | | | | | | | | |
| High | 109.2 | 29.2 | 29.3 | 26.4 | 24.3 | 31.1 | 4.4 | 84.4 | 13.1 | 113.3 | B1 |
| Middle | 100.3 | 27.1 | 26.5 | 24.0 | 22.5 | 33.1 | 4.5 | 77.1 | 10.5 | 99.8 | B2 |
| Low | 85.9 | 22.3 | 22.3 | 21.5 | 19.1 | 33.8 | 4.7 | 65.4 | 07.8 | 83.8 | B3 |
| Factor C: Age | | | | | | | | | | | |
| High | 104.6 | 28.5 | 27.5 | 25.0 | 23.4 | 31.8 | 4.5 | 79.9 | 12.3 | 104.7 | C1 |
| Middle | 100.6 | 26.8 | 26.5 | 24.6 | 22.6 | 32.1 | 4.4 | 77.6 | 10.9 | 101.8 | C2 |
| Low | 90.1 | 23.9 | 24.0 | 22.3 | 19.9 | 34.1 | 4.7 | 69.3 | 08.2 | 90.4 | C3 |
| Factor D: Sex | | | | | | | | | | | |
| Male | 96.2 | 25.7 | 24.7 | 23.4 | 22.2 | 30.6 | 4.7 | 74.1 | 10.4 | 95.7 | D1 |
| Female | 100.7 | 27.0 | 27.3 | 24.5 | 21.7 | 24.7 | 4.3 | 77.1 | 10.6 | 102.2 | D2 |
| Standard Deviation | 19.2 | 5.6 | 6.0 | 4.9 | 5.3 | 9.4 | 2.1 | 15.4 | 4.1 | 19.2 | |
| Maximum Possible Score | 156.0 | 39.0 | 39.0 | 39.0 | 39.0 | 48.0 | 12.0 | 112.0 | 20.0 | 156.0 | |

* Reading level replaces I.Q. as Factor B in Problem 10

## TABLE VIII

### Significant Factors and Interactions Revealed by Analyses of Variance

| Problem | Factors | | | | Significant Interactions |
|---|---|---|---|---|---|
| | A - method | B - I.Q. | C - Age | D - sex | |
| 1 | x[1] | x | x | x | BC |
| 2 | | x | x | x | none |
| 3 | x | x | x | x | BC |
| 4 | | x | x | | AB |
| 5 | x | x | x | | BD |
| 6 | x | | | x | none |
| 7 | | | | | AB, AD |
| 8 | x | x | x | | AD, BC, ABD |
| 9 | | x | x | | none |
| 10 | x | x[2] | x | x | none |

1. "x" indicates that factor is significant.

2. Reading level used instead of I.Q.

## TABLE IX

### Comparison of Means, Factor A
### (Method of Exposure to Stories)

| Prob. | Differences: | | | Shortest Ranges | | Significance of Differences |
|---|---|---|---|---|---|---|
| | Levels 1 & 2 | Levels 1 & 3 | Levels 2 & 3 | 2 Means | 3 Means | |
| 1 | 5.0<br>(2)* | 8.3<br>(3) | 3.3<br>(3) | 4.90 | 5.16 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - no |
| 2 | 1.3<br>(2) | 1.7<br>(3) | .4<br>(3) | 1.51 | 1.59 | 1 & 2 - no<br>1 & 3 - yes<br>2 & 3 - no |
| 3 | 2.4<br>(2) | 3.6<br>(3) | 1.2<br>(3) | 1.54 | 1.62 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - no |
| 4 | .7<br>(1) | .6<br>(3) | 1.3<br>(3) | 1.43 | 1.50 | 1 & 2 - no<br>1 & 3 - no<br>2 & 3 - no |
| 5 | 2.2<br>(2) | 2.5<br>(3) | .3<br>(3) | 1.51 | 1.59 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - no |
| 6 | 4.0<br>(2) | 4.0<br>(3) | 0.0 | 2.97 | 3.12 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - no |
| 7 | 0.0 | 0.0 | 0.0 | .70 | .74 | 1 & 2 - no<br>1 & 3 - no<br>2 & 3 - no |
| 8 | 3.9<br>(2) | 6.1<br>(3) | 2.2<br>(3) | 4.00 | 4.21 | 1 & 2 - no<br>1 & 3 - yes<br>2 & 3 - no |
| 9 | .6<br>(1) | .4<br>(3) | 1.0<br>(3) | 1.04 | 1.09 | 1 & 2 - no<br>1 & 3 - no<br>2 & 3 - no |
| 10 | 5.2<br>(2) | 7.1<br>(3) | 1.8<br>(3) | 4.28 | 4.51 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - no |

* Figure in parentheses indicates which of the two levels being compared is the larger.

## TABLE X

### Comparison of Means, Factor B (I.Q.)

| Prob. | Differences: | | | Shortest Ranges | | Significance of Differences |
|---|---|---|---|---|---|---|
| | Levels 1 & 2 | Levels 1 & 3 | Levels 2 & 3 | 2 Means | 3 Means | |
| 1 | 8.9<br>(1)* | 23.3<br>(1) | 14.4<br>(2) | 4.90 | 5.16 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 2 | 2.1<br>(1) | 6.4<br>(1) | 4.3<br>(2) | 1.51 | 1.59 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 3 | 2.8<br>(1) | 6.0<br>(1) | 4.2<br>(2) | 1.54 | 1.62 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 4 | 2.4<br>(1) | 4.9<br>(1) | 2.5<br>(2) | 1.43 | 1.50 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 5 | 1.8<br>(1) | 5.2<br>(1) | 3.4<br>(2) | 1.51 | 1.59 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 6 | 2.0<br>(2) | 2.7<br>(3) | .7<br>(3) | 2.97 | 3.12 | 1 & 2 - no<br>1 & 3 - no<br>2 & 3 - no |
| 7 | .1<br>(2) | .3<br>(3) | .2<br>(3) | .70 | .74 | 1 & 2 - no<br>1 & 3 - no<br>2 & 3 - no |
| 8 | 7.3<br>(1) | 19.1<br>(1) | 11.1<br>(2) | 4.00 | 4.21 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 9 | 2.6<br>(1) | 5.3<br>(1) | 2.7<br>(2) | 1.04 | 1.09 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 10** | 13.5<br>(1) | 29.5<br>(1) | 16.0<br>(2) | 4.28 | 4.51 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |

* Figure in parentheses indicates which of the two levels being compared is the larger.

** Reading level replaces I.Q. in this problem.

## TABLE XI

### Comparison of Means, Factor C (Age)

| Prob. | Differences: |  |  | Shortest Ranges |  | Significance of Differences |
|---|---|---|---|---|---|---|
|  | Levels 1 & 2 | Levels 1 & 3 | Levels 2 & 3 | 2 Means | 3 Means |  |
| 1 | 4.0<br>(1)* | 14.5<br>(1) | 10.5<br>(2) | 4.90 | 5.16 | 1 & 2 - no<br>1 & 3 - yes<br>2 & 3 - yes |
| 2 | 1.7<br>(1) | 4.6<br>(1) | 2.9<br>(2) | 1.51 | 1.59 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 3 | 1.0<br>(1) | 3.5<br>(1) | 2.5<br>(2) | 1.54 | 1.62 | 1 & 2 - no<br>1 & 3 - yes<br>2 & 3 - yes |
| 4 | .4<br>(1) | 2.7<br>(1) | 2.3<br>(2) | 1.43 | 1.50 | 1 & 2 - no<br>1 & 3 - yes<br>2 & 3 - yes |
| 5 | 1.8<br>(1) | 3.5<br>(1) | 2.7<br>(2) | 1.51 | 1.59 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 6 | .3<br>(2) | 2.3<br>(3) | 2.0<br>(3) | 2.97 | 3.12 | 1 & 2 - no<br>1 & 3 - no<br>2 & 3 - no |
| 7 | .1<br>(1) | .2<br>(3) | .3<br>(3) | .70 | .74 | 1 & 2 - no<br>1 & 3 - no<br>2 & 3 - no |
| 8 | 2.3<br>(1) | 10.6<br>(1) | 8.3<br>(2) | 4.00 | 4.21 | 1 & 2 - no<br>1 & 3 - yes<br>2 & 3 - yes |
| 9 | 1.4<br>(1) | 4.1<br>(1) | 2.7<br>(2) | 1.04 | 1.09 | 1 & 2 - yes<br>1 & 3 - yes<br>2 & 3 - yes |
| 10 | 2.9<br>(1) | 14.3<br>(1) | 11.4<br>(2) | 4.28 | 4.51 | 1 & 2 - no<br>1 & 3 - yes<br>2 & 3 - yes |

* Figure in parentheses indicates which of the two levels being compared is the larger.

## TABLE XII[1]

Comparison of Means, Factor D (Sex)

| Problem | Differences Between Means | F Ratios | Significant Values of F .05 | .01 | Significance of Differences |
|---|---|---|---|---|---|
| 1 | 4.5 (F)* | 5.06 | 3.90 | 6.78 | yes |
| 2 | 1.3 (F) | 4.57 | 3.90 | 6.78 | yes |
| 3 | 2.6 (F) | 17.95 | 3.90 | 6.78 | yes |
| 4 | 1.1 (F) | 3.0 | 3.90 | 6.78 | no |
| 5 | .5 (M) | .56 | 3.90 | 6.78 | no |
| 6 | 4.1 (F) | 10.7 | 3.90 | 6.78 | yes |
| 7 | .4 (M) | 1.59 | 3.90 | 6.78 | no |
| 8 | 3.0 (F) | 3.67 | 3.90 | 6.78 | no |
| 9 | .2 (F) | .31 | 3.90 | 6.78 | no |
| 10 | 6.5 (F) | 14.57 | 3.90 | 6.78 | yes |

1. Since the D factor has only two levels, the analysis of variance alone is sufficient to determine significance of differences between means.

* Letter indicates sex that had the larger of the two means.

## Interpretation of Statistical Analysis

The results of the statistical analysis will be interpreted in the light of the three hypotheses the experiment was designed to test.

### First Hypothesis

"Students who view a film version of a short story as well as read it respond differently from those who only read."

The experiment shows that, taking the stories as a whole, film viewing does produce a significant difference in the response to the stories upon which the films were based. This fact is demonstrated by comparing the scores of those who only read (level 1) with the scores of those who viewed the films as well as read (levels 2 and 3 ) for the A factor in Problem 1 (total scores, all stories). Table VII, page 60, indicates that the mean scores of those who viewed the films were an average of 6.6 points higher than the scores of those who only read. That this difference is large enough to be significant is indicated by Table VIII, page 61; that each of the film viewing groups scored significantly higher than the read-only group is indicated by Table IX, page 62.

Looking at the results for individual stories, however, we see that the effect of film-viewing varies from story to story. The motion picture version of "The Tell-Tale Heart," considered by itself, had no significant effect on response. Table VII, page 60, shows that those who read before viewing scored slightly lower than those who only read: a mean score of 23.3 for the former as against 24.0 for the latter; whereas those who viewed before reading scored slightly higher than those who only read. In neither case is the difference large enough to be significant. In the case of "The Last Lesson," film-viewing affected the response of only those students who viewed before reading; and even here, as the comparison of means, Table IX, page 62, shows, the difference between the means of these two groups is barely significant. "The Last Leaf" and "The Cop and the Anthem" were the two stories whose film versions had the greatest effect on response. Both film groups did significantly better on the tests than did the group which only read.

The failure of the film version of "The Tell-Tale Heart" to improve response[1] is not surprising, since the film maker departed greatly from Poe's tale.[2] Of all the films involved in the experiment it is the least faithful to the original. In view of the great disparity between the two versions, an actual impairment of response might have been expected as a result of seeing the picture.

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[1] As mentioned under "definitions," Chapter I, supra, "to improve response" as used in this study means to produce higher scores on the tests used in the experiment.

[2] Vide supra, Chapter III.

Considered from the point of view of selected aspects of response rather than individual stories, the results show that as regards enjoyment, both film-viewing groups responded better than did the read-only group; but as regards comprehension, only students who read after viewing improved significantly. Film-viewing in itself had no effect on knowledge of vocabulary or on identification with characters in the stories. These interpretations are supported by the comparisons of means shown in Table IX, page 62.

The experiment shows that every significant difference in response attributable to film-viewing is in the nature of an improvement. Referring again to Table IX, we see that for the stories as a whole (Problem 1 and Problem 10), "The Last Leaf" (Problem 3), "The Cop and the Anthem" (Problem 5), and enjoyment (Problem 6), both film-viewing groups scored significantly higher than the control group. For "The Last Lesson" (Problem 2) and comprehension (Problem 8), however, only those who viewed the film before reading showed improvement. In two instances, "The Tell-Tale Heart" (Problem 4) and vocabulary (Problem 9), students who viewed after reading achieved lower mean scores than those who only read, but the differences were not large enough to be statistically significant.

Method of exposure to the stories in itself had no effect on identification with characters in the stories (Problem 7). The scores for the three groups were exactly the same: 4.5. Since, as Table VIII, page 61, indicates, none of the other factors in itself had any significant effect on identification, the failure of the tests to record differences in this area was probably due to the fact that the scale of values was too narrow. A score of only three was the highest possible identification score for any one story, or a total of twelve for the stories as a whole.

### Interaction Between A and Other Factors

Thus far only the effects of the method of exposure to the stories, the A factor, by itself have been considered. We now turn to the matter of interaction between this factor and the other variables: I.Q., age, and sex.

The nature of interactions is shown in two ways: (1) a table of the distribution of the means of one factor over the levels of the other and (2) a graph on which the data shown in the table has been plotted. The extent to which the lines on the graph are not parallel is an indication of the degree of interaction.

Table VIII, page 61, shows that there is no significant interaction between method exposure to the stories (A factor) and any other factor in problem 1 (total scores, all stories), problem 2 ("The Last Lesson"), problem 3 ("The Last Leaf"), problem 5 ("The Cop and the Anthem"), problem 6 (enjoyment), problem 9 (vocabulary), and problem 10 (total scores, all stories, reading level used instead of

I.Q. as a variable). This means that in these problems any differences among the read-only, read-view, and view-read groups are not dependent upon any particular I.Q., age, sex, or reading level. Differences apply equally to high I.Q. and low I.Q. students, to the youngest and to the oldest, to boys and to girls, to students of high reading ability and to students of low reading ability.

In problem 4 ("The Tell-Tale Heart"), although the method of exposure to the stories in itself is not significant, the A factor does interact significantly with I.Q. (factor B). Table XIII and Diagram 1, page 69, show the nature of the interaction. They indicate that film-viewing did not improve the response of high I.Q. students to "The Tell-Tale Heart." In fact, both of the high I.Q. film-viewing groups had mean scores lower than the mean of those who only read, with the view-read group lowest of all. At the middle I.Q. level scores of all three groups are lower than they are at the $B_1$ level, with the view-read group still in the lowest position. At the low I.Q. level, however, there is a complete reversal of the situation that exists at the high I.Q. level: The read-only group, which had been highest, is now lowest; the read-view group, which had been lowest, is now highest. Whereas for the read-only and view-read groups, there was a steady decline in achievement as I.Q. became lower, for the read-view group there was no decline between middle and low I.Q. levels. Seeing the film version of "The Tell-Tale Heart" either before or after reading evidently helped to improve the response of low I.Q. students, with the viewing-after more effective than the viewing-before. Viewing-after-reading also enabled the low I.Q. students to perform as well as their brighter classmates in the middle I.Q. group who had been exposed to the story in the same way.

In problem 7 (identification) method of exposure to the stories interacts significantly with I.Q. (factor B) and with sex (factor D) although none of these factors is significant in itself. Table XIV and Diagram 2, page 70, show the nature of the AXB interaction. These indicate that the effects of the motion picture on the students' identification of themselves with characters in the story were quite different for each of the I.Q. groups. Film-viewing increased the amount of identification for the high I.Q. subjects, with viewing-before-reading more effective than viewing-after-reading. Low I.Q. students exhibited a reverse pattern, with film-viewing reducing the amount of identification. Middle I.Q. students were unaffected either way by the films. Differences among the I.Q. groups are greatest for those who only read and smallest for those who read before viewing.

Table XV and Diagram 3, page 71, show details of the AXD interaction in problem 7. We note that the films removed the sex differences in identification which were present among those who only read the stories. The superiority of the boys over the girls in identification at the $A_1$ (read-only) level has been reduced to parity at the $A_3$ (view-read) level. For boys, the film-viewing tended to reduce the amount of identification; for girls, it tended to increase the amount of identification. In the cases of both I.Q. and sex, the films reduced differences in amount of identification.

# TABLE XIII

Distribution of Means of Axb Over Levels of C and D in Problem 4 ("The Tell-Tale Heart")

| I.Q. / METHOD | $A_1$ (read only) | $A_2$ (read-view) | $A_3$ (view-read) |
|---|---|---|---|
| $B_1$ (high) | 27.4 | 24.8 | 27.0 |
| $B_2$ (middle) | 24.6 | 22.5 | 24.9 |
| $B_3$ (low) | 20.0 | 22.6 | 21.9 |

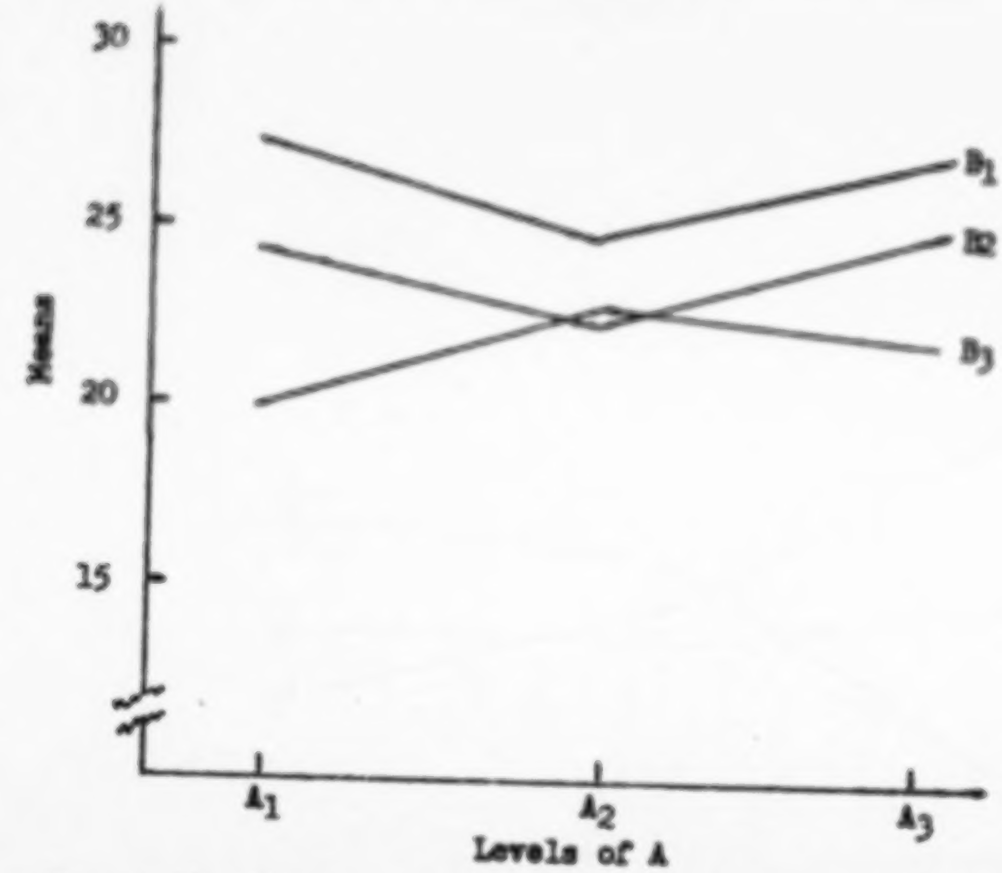

Diagram 1. Means for Levels of B at Each Level of A in Problem 4

TABLE XIV
Distribution of Means of AxB over Levels of C and D
in Problem 7 (Identification)

| METHOD | $A_1$ (read only) | $A_2$ (read-view) | $A_3$ (view-read) |
|---|---|---|---|
| I.Q. | | | |
| $B_1$ (high) | 3.5 | 4.7 | 5.0 |
| $B_2$ (middle) | 4.5 | 4.3 | 4.4 |
| $B_3$ (low) | 5.5 | 4.5 | 4.1 |

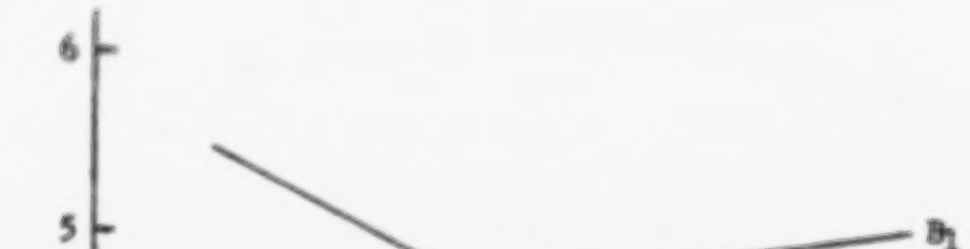

Diagram 2. Means for Levels of B at Each Level of A in Problem 7

## TABLE XV

### Distribution of Means of AxD Over Levels of B and C in Problem 7 (Identification)

| METHOD | $A_1$ (read only) | $A_2$ (read-view) | $A_3$ (view-read) |
|---|---|---|---|
| SEX | | | |
| $D_1$ (male) | 5.3 | 4.3 | 4.5 |
| $D_2$ (female) | 3.7 | 4.7 | 4.5 |

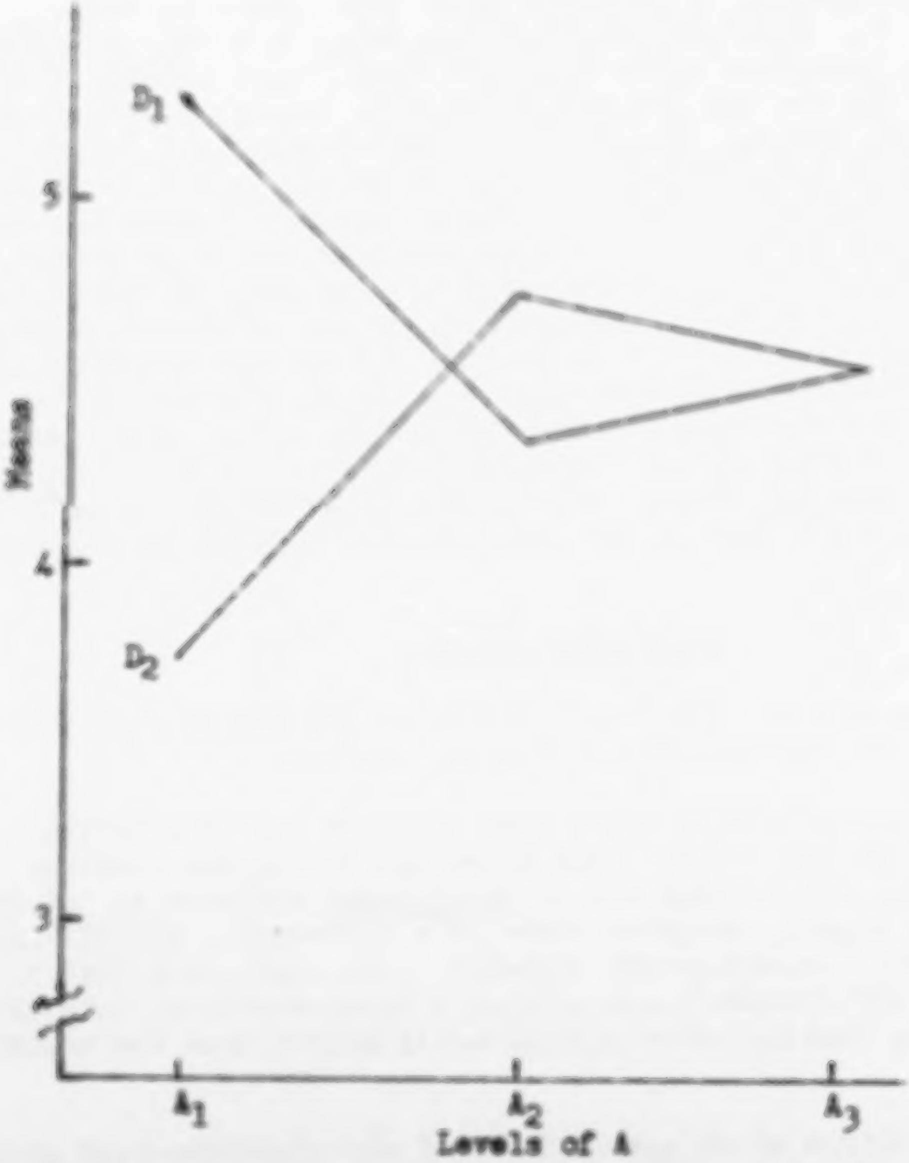

Diagram 3. Means for Levels of D at Each Level of A in Problem 7

Method of exposure to the stories also interacts significantly with sex (factor D) and with both sex and I.Q. (factors D and B) in problem 8 (comprehension).

Table XVI and Diagram 4, page 73, show the nature of the AXD interaction in problem 8. As in the case of identification, the films reduced the marked difference in comprehension between boys and girls in the read-only group. Girls who only read the stories scored almost nine points higher than the boys in same category, but in the film-viewing groups there is only a .1 point difference between the sexes. The effect of the films was to bring the boys' comprehension up to the girls'. For the girls, only the view-read sequence raised comprehension; the read-view sequence actually lowered it. However, neither of these fluctuations was large enough to be significant. For the boys, each of the combinations of reading and viewing was about as effective as the other in improving comprehension.

The only significant triple interaction in the experiment is the one involving method of exposure to the stories, sex, and I.Q. in relation to comprehension as shown in Table XVII, page 74, and Diagram 5, page 75. This AXDXB interaction means that the statements in the preceding paragraph about the relationship between method of exposure to the stories and sex must be further qualified by reference to particular I.Q. levels. The large gap between boys and girls in comprehension based on reading alone applies mainly to the low I.Q. group. The difference here is almost twenty points, whereas the differences in the middle and high I.Q. groups are less than four points. We also note that the effect of film-viewing in improving the boys' comprehension applies only to middle and low I.Q. males. High I.Q. boys were not significantly affected by film-viewing. Of the two combinations of reading and viewing, the read-view sequence was more effective for low I.Q. boys; the view-read sequence for middle I.Q. boys. Also, viewing the films before reading raised the comprehension level of middle I.Q. boys to that of high I.Q. boys. The failure of film-viewing to have any significant effect upon girls' comprehension applies to all three I.Q. levels.

## Second Hypothesis

"Students who view the film before reading respond differently from those who view the film after reading."

The investigation shows that students who view before reading respond somewhat better than those who view after reading. Though Table IX, page 62, shows there are no significant differences between the film-viewing groups, wherever there is a difference, the difference is in favor of the view-then-read students. One also notes that in problem 2 ("The Last Lesson") and problem 8 (comprehension) only those who viewed before reading score significantly higher than the control group.

The slight advantage in favor of the view-then-read group may be due to the fact that the written story, upon which the test was

## TABLE XVI

Distribution of Means of AxD over Levels of B and C in Problem 8 (Comprehension)

| METHOD | $A_1$ (read-only) | $A_2$ (read-view) | $A_3$ (view-read) |
|---|---|---|---|
| SEX | | | |
| D1 (male) | 67.7 | 76.9 | 77.7 |
| D2 (female) | 76.6 | 75.7 | 79.1 |

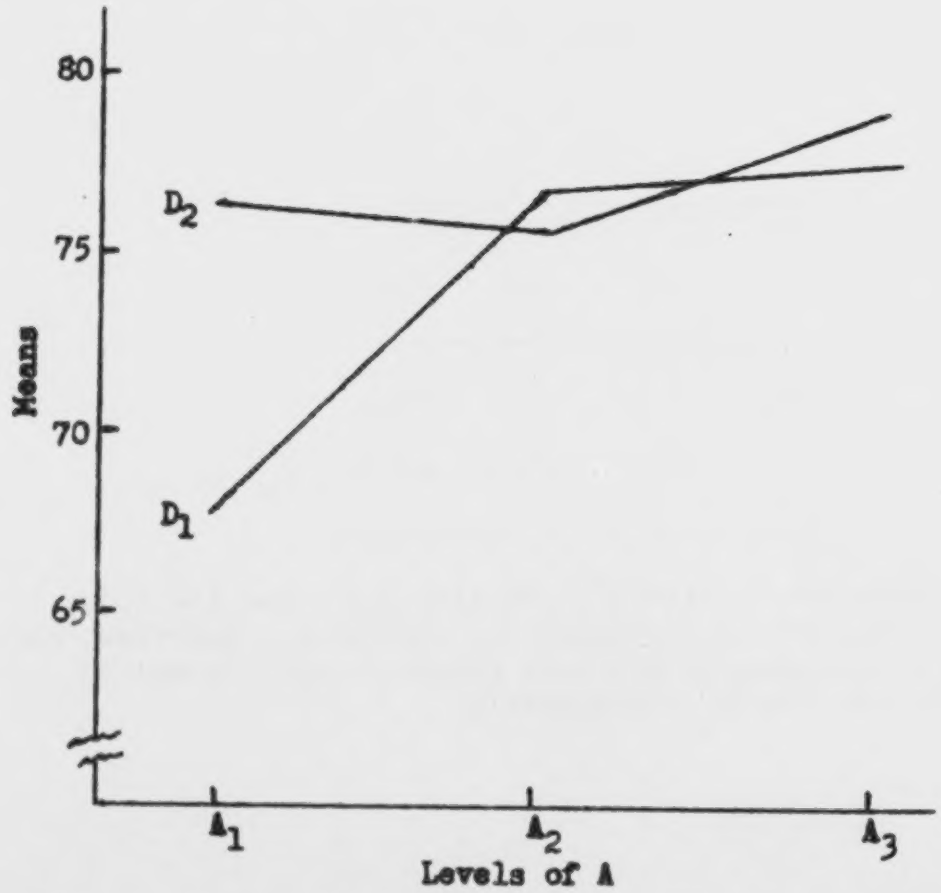

Diagram 4. Means for Levels of D at Each Level of A in Problem 8

## TABLE XVII

Distribution of Means of AxBxD Over Levels of C
in Proble⁻ 8 (Comprehension)

Table (1)

$B_1$

| | $A_1$ | $A_2$ | $A_3$ |
|---|---|---|---|
| $D_1$ | 83.8 | 82.2 | 82.3 |
| $D_2$ | 86.6 | 83.7 | 88.7 |

Table (2)

$B_2$

| | $A_1$ | $A_2$ | $A_3$ |
|---|---|---|---|
| $D_1$ | 71.7 | 76.3 | 85.2 |
| $D_2$ | 75.1 | 75.9 | 78.2 |

Table (3)

$B_3$

| | $A_1$ | $A_2$ | $A_3$ |
|---|---|---|---|
| $D_1$ | 48.6 | 71.4 | 66.2 |
| $D_2$ | 69.3 | 67.3 | 69.3 |

$B_1$, $B_2$, and $B_3$ correspond to high I.Q., middle I.Q., and low I.Q., respectively. A1, A2, and A3 correspond to read-only, read-view, and view-read method of exposure to stories, respectively. $D_1$ and $D_2$ correspond to male and female, respectively.

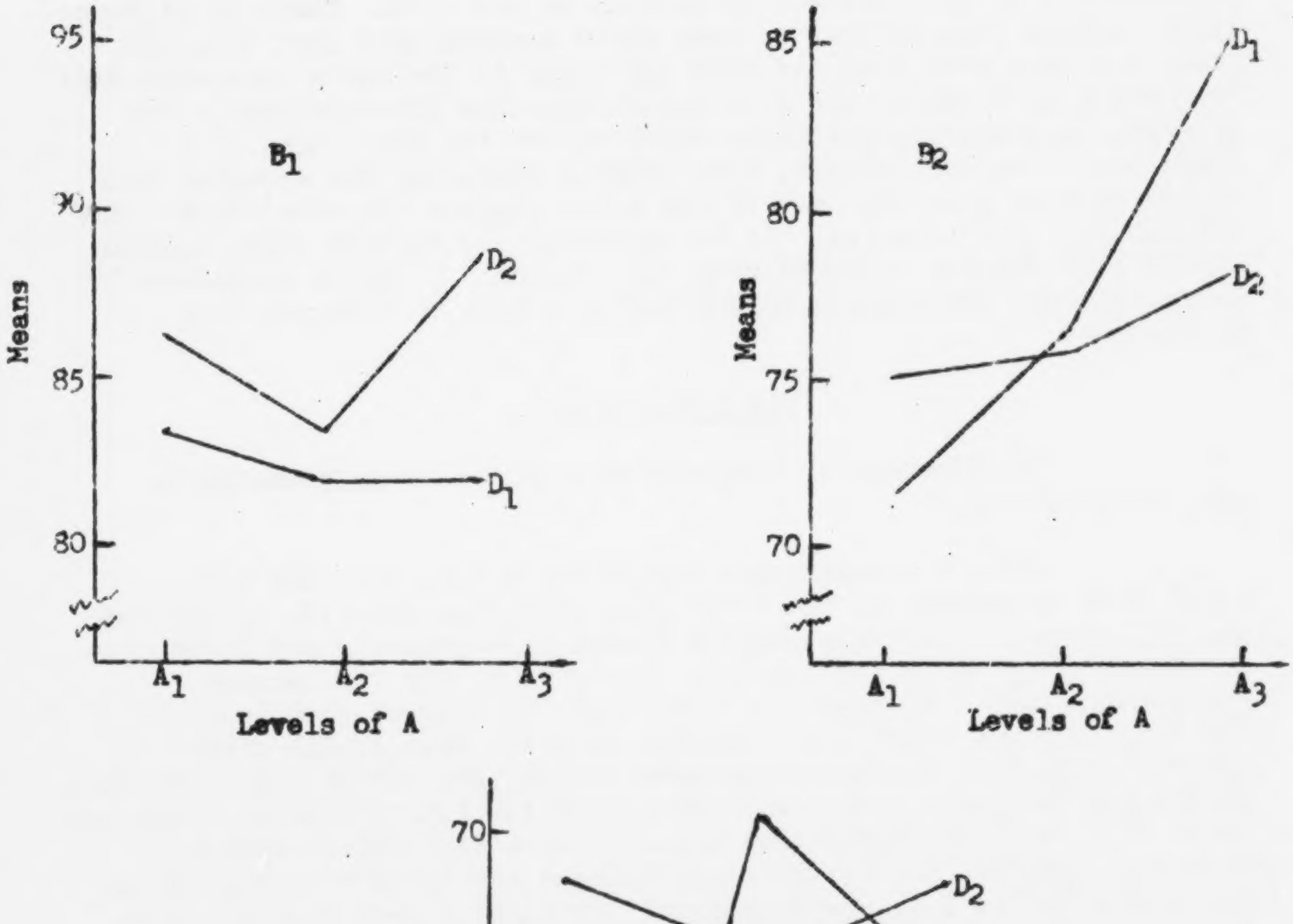

Diagram 5. Means for Levels of D at Each Level of A for $B_1$, $B_2$, and $B_3$ in Problem 8. Original data given in Table XVII.

based, was their more recent impression, thus enabling them more successfully to discount any deviations in the film. There is evidence that, despite instructions to base their answers upon what they had read, not upon what they had seen and heard in the movie, students were responding in terms of the film rather than the literary work. For example, in answering questions which called for the naming of a character liked or disliked, some named a character who appeared only in the film or gave the name of the actor playing the role rather than the name of the character. It is reasonable to suppose that, insofar as the film version differed from the original, it would be easier for those who read immediately before taking a test to discount such differences.

## Third Hypothesis

"Differences in response are related to differences in age, sex, and I.Q."

Among the organismic variables of age, sex, and I.Q., which were considered in the first nine problems, the I.Q. factor was the most potent. In every problem except 6 (enjoyment) and 7 (identification) the _F_ ratio for the I.Q. factor is by far the largest. Furthermore, Table X, page 63, shows that the mean of each level of the I.Q. factor differs significantly from the mean of the other levels: high I.Q. students responded better than middle I.Q. students; middle I.Q. students responded better than low I.Q. students. Although Table VIII, page 69, shows that I.Q. is not a significant factor in enjoyment and identification, it is interesting to note that in these two areas the low I.Q. group achieved the highest mean scores. However, the comparison of means, Table X, page 63, indicates that the differences between the low I.Q. group and the other levels are not large enough to be statistically significant.

The age factor, factor C, is also a significant one in every problem except enjoyment and identification. Table XI, page 64, shows, however, that, unlike I.Q., differences due to age are not significant on all levels. While there is a significant difference between the high and low, and between the middle and low age groups in every problem, there is a significant difference between the high and middle groups only in problem 2 ("The Last Lesson"), 5 ("The Cop and the Anthem"), and 9 (vocabulary). The experiment shows that, in general, older students respond better than younger ones, irrespective of sex or method of exposure to stories.

Results relating to the third major organismic variable, sex, are shown in Table XII, page 65. This table indicates that girls, on the whole, responded better than boys. In every problem in which there is a significant difference between the boys and the girls, the difference is in favor of the girls. In only two instance, "The Cop and the Anthem," and identification, did boys outscore girls, but their performances were not significantly better. The story with the greatest difference between the sexes is "The Last Leaf." Among the various aspects of response, irrespective of the specific story, there is a significant difference between sexes only in enjoyment. Furthermore, except for identification, all the other differences in aspects of response are in favor of the girls.

A limited study was made of reading level as an organismic variable. Problem 10, Table XXXI, page 162, is an analysis of variance based upon the total scores for all stories, all aspects of response, with reading level used instead of I.Q. as the B factor. As could have been anticipated, reading level turned out to be an even more powerful factor than I.Q. The *F* ratio for it is 99.77, as against 46.13 for I.Q. Table X, page 63, shows that means differ significantly on all levels, i.e., readers in the high group responded better than those in the middle group; readers in the middle group responded better than those in the low group.

## Interactions among I.Q., Age, and Sex Factors

The summary of the analyses of variance, Table VIII, page 61, shows that there are significant interactions between I.Q. (Factor B) and age (Factor C) in problems 1 (all stories, all aspects of response), 3 ("The Last Leaf"), and 8 (comprehension).

Table XVIII and Diagram 6, page 78, permit us to examine the nature of the interaction in problem 1. The table and its accompanying graphic display indicate that the interaction takes place only at the low I.Q. - high age level. So far as the response to the stories as a whole is concerned, it seems that the low I.Q. students reach a peak at the middle age level (median age: thirteen years, eight months) and do not respond very much better at the higher age level; whereas the middle and high I.Q. groups improve their response significantly as they move through the three age levels. High I.Q. students in the low and middle age groups respond as well as average (middle) I.Q. students approximately a year and three months older than they. Whether the high and middle I.Q. groups will continue to improve as they move into still higher age groups is a question beyond the scope of the present investigation. We also cannot judge on the basis of the data presented here whether the low I.Q. group have really reached the peak of their ability to respond or have merely attained a plateau from which they may advance at some later age. However, so far as the junior high school is concerned, they have reached their peak.

The interaction between I.Q. and age in response to "The Last Leaf" is shown in Table XIX and Diagram 7, page 79. Here again, as in problem 1, the low I.Q. students reach a peak at the middle age level and do not improve as they get older. The data also indicate that whereas the low and middle age groups improve steadily as they move into high I.Q. categories, the high age - high I.Q. group performs hardly better than middle I.Q. students of the same age. The three age groups diverge most at the middle I.Q. level and least at the high I.Q. level. Indeed, for this story, age makes little difference in the response of high I.Q. students: twelve year olds do practically as well as fourteen year olds; but for average I.Q. students, an increase in age has a decided effect on improving response.

The interaction of these same two organismic factors in

## TABLE XVIII

Distribution of Means of BxC Over Levels of A and D in Problem 1 (Total Scores, All Stories)

| I.Q.<br>AGE | $B_1$ (high) | $B_2$ (middle) | $B_3$ (low) |
|---|---|---|---|
| $C_1$ (high) | 115.6 | 108.3 | 89.9 |
| $C_2$ (middle) | 110.9 | 103.3 | 89.6 |
| $C_3$ (low) | 101.1 | 91.0 | 78.2 |

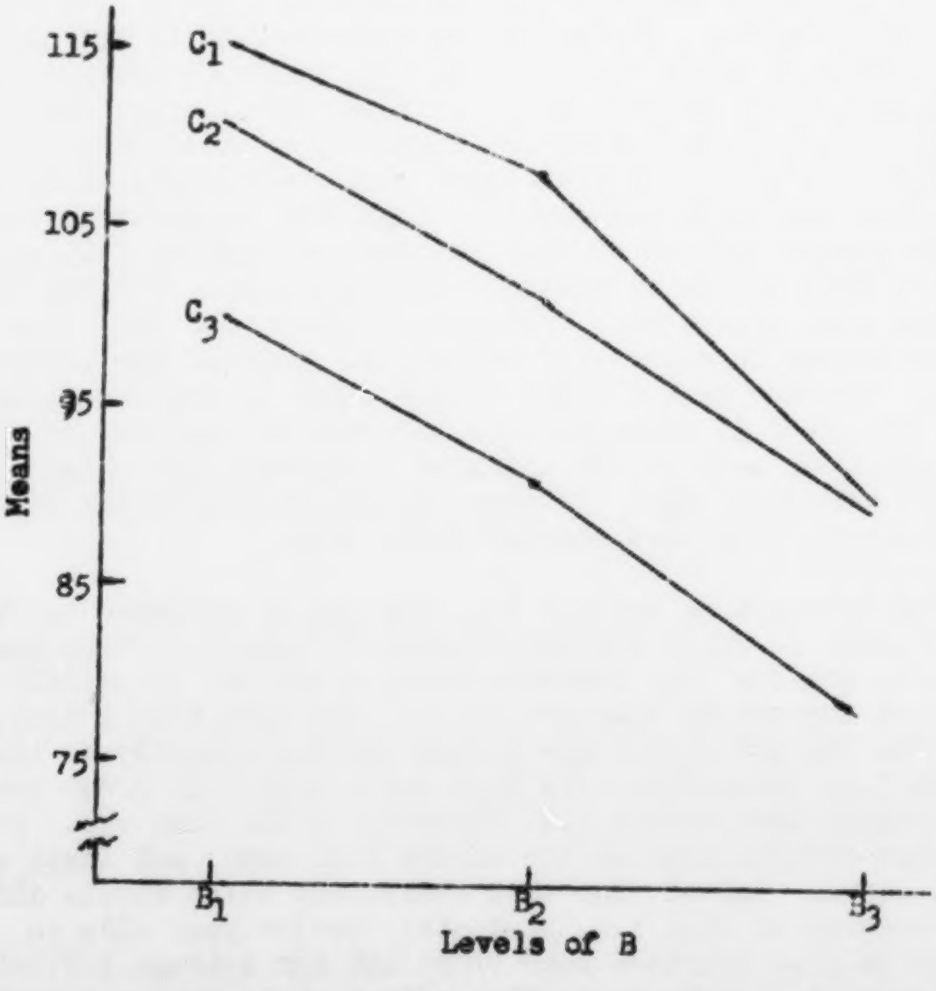

Diagram 6. Means for levels of C at each Level of B in Problem 1

## TABLE XIX

### Distribution of Means of BxC Over Levels of A and D in Problem 3 ("The Last Leaf")

| I.Q.<br>AGE | $B_1$ (high) | $B_2$ (middle) | $B_3$ (low) |
|---|---|---|---|
| $C_1$ (high) | 29.8 | 29.5 | 23.2 |
| $C_2$ (middle) | 29.3 | 26.7 | 23.8 |
| $C_3$ (low) | 28.8 | 23.3 | 19.9 |

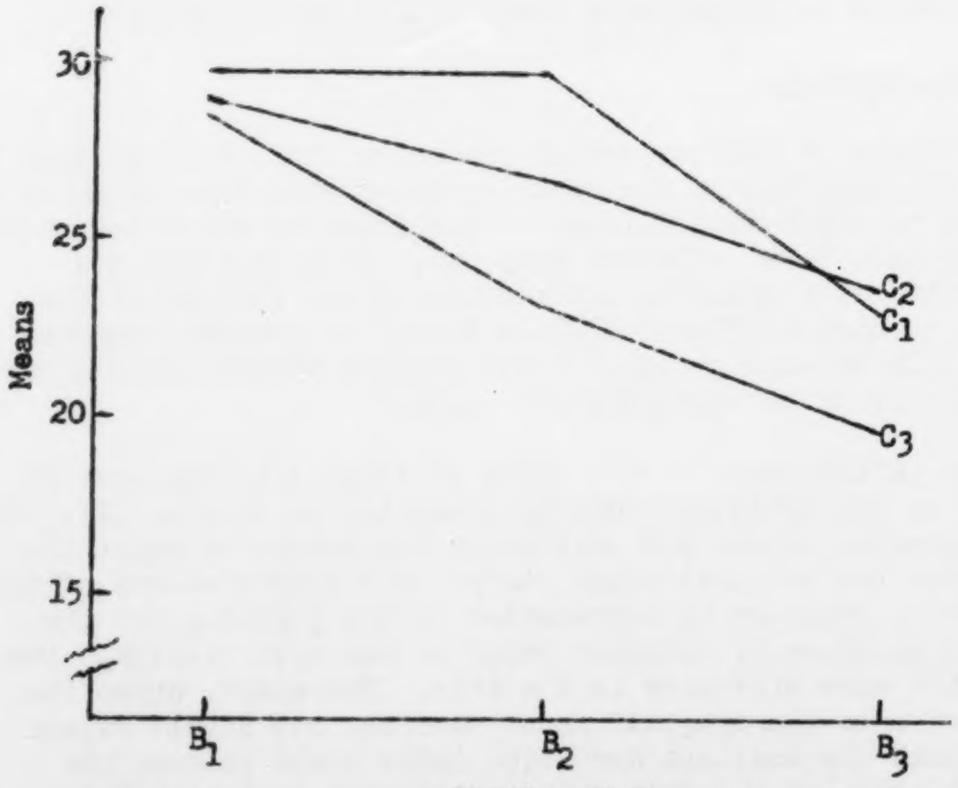

Diagram 7. Means for levels of C at each level of B in Problem 3

comprehension of the stories is shown in Table XX and Diagram 8, page 81. Low I.Q. students reach a peak at the middle age level; and average I.Q. students catch up. as it were, with the high I.Q. students at the high age level whereas they had been behind them in comprehension at the earlier age levels. Whether this levelling off between the high and average I.Q. students will continue when they get older is a question which the data developed in the present study cannot answer. The data do suggest that, in a junior high school, on the basis of comprehension of stories, the oldest pupils of average and above average I.Q. - roughly, the ninth-graders - could well be grouped together, whereas the two younger groups vary so much in comprehension for each I.Q. level that they might well be kept separate.

Another significant interaction between organismic variables occurs in problem 5 ("The Cop and the Anthem"), where factor B (I.Q.) and factor D (sex) are interdependent. Table XXI and Diagram 9, page 82, tell us that boys responded to "The Cop and the Anthem" better than girls at the middle I.Q. level. At the low and high I.Q. levels there is no significant difference between males and females. Since BXD is the only significant interaction in problem 5, we may say that this superiority of middle I.Q. boys over middle I.Q. girls applies regardless of age or method of exposure to the stories. Boys reached the peak of their ability to respond to "The Cop and the Anthem" at the middle I.Q. point and remained at that level of performance even when I.Q.'s became higher. Girls, on the other hand, continued to improve in response as their I.Q.'s became better.

## Effect of Film Deviations

Although it was not one of the major factors considered in the design of the experiment, the study produced some data by which to note the extent to which faithfulness of the films to the short stories upon which they were based affected response. This variable has already been cited as a possible explanation of the failure of the motion picture version of "The Tell-Tale Heart" to improve response of either of the film-viewing groups.[1] Some further observations about the effects of this factor are presented here.

The faithfulness of the films to their literary sources is represented by the deviation indexes presented in Chapter III. The smaller the deviation index, the smaller is the amount by which the film differs from the original short story. The effectiveness of the films in improving response is represented by the *F* ratios for the A factor in the analyses of variance based on the test results. The larger the *F*, the more effective is the film. Therefore, since the tests were based upon the original short stories, one should expect that the film with the smallest deviation index would produce the largest *F* ratio and that the film with the largest deviation index would produce the smallest *F* ratio.

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[1] *Vide supra*., p. 66.

## TABLE XX

Distribution of Means of BxC Over Levels of A and B
in Problem 8 (Comprehension)

| I.Q. | $B_1$ (high) | $B_2$ (middle) | $B_3$ (low) |
|---|---|---|---|
| AGE | | | |
| $C_1$ (high) | 85.7 | 86.2 | 67.9 |
| $C_2$ (middle) | 85.5 | 78.5 | 68.7 |
| $C_3$ (low) | 81.9 | 66.5 | 59.7 |

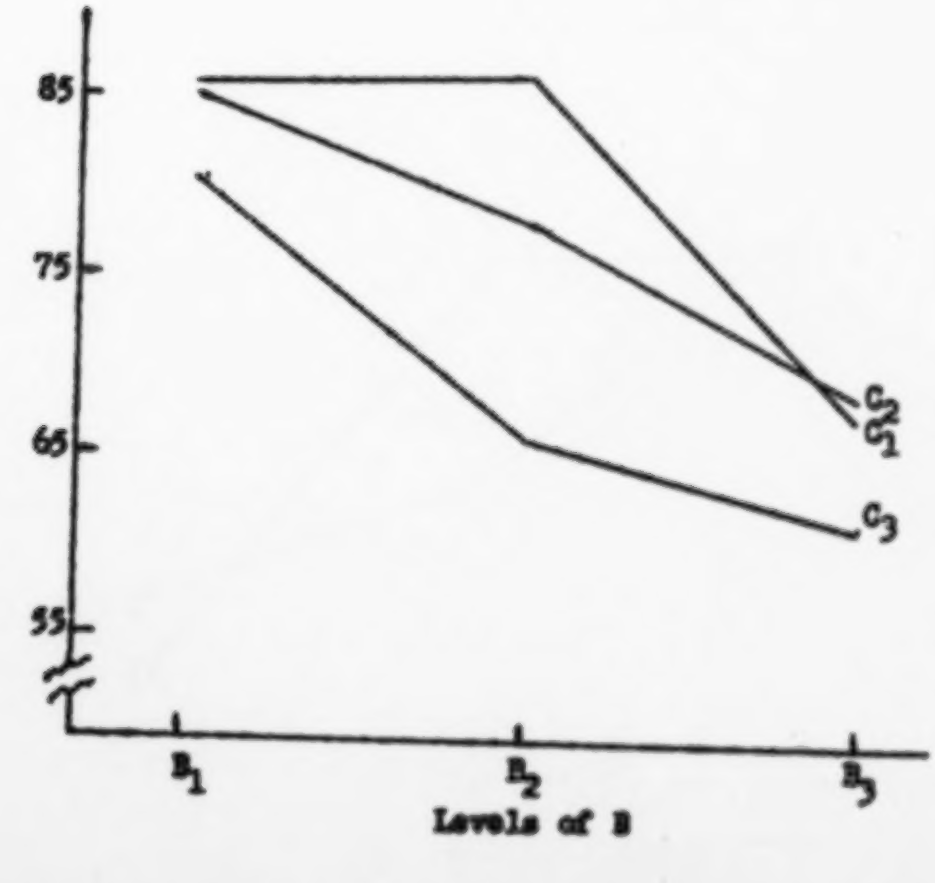

Diagram 8. Means for levels of C at each level of B in Problem 8

## TABLE XXI

Distribution of Means of BxD Over Levels of A and C in Problem 5 ("The Cop and the Anthem")

| I.Q. | $B_1$ (high) | $B_2$ (middle) | $B_3$ (low) |
|---|---|---|---|
| SEX | | | |
| $D_1$ (male) | 24.1 | 24.0 | 18.6 |
| $D_2$ (female) | 24.5 | 21.0 | 19.6 |

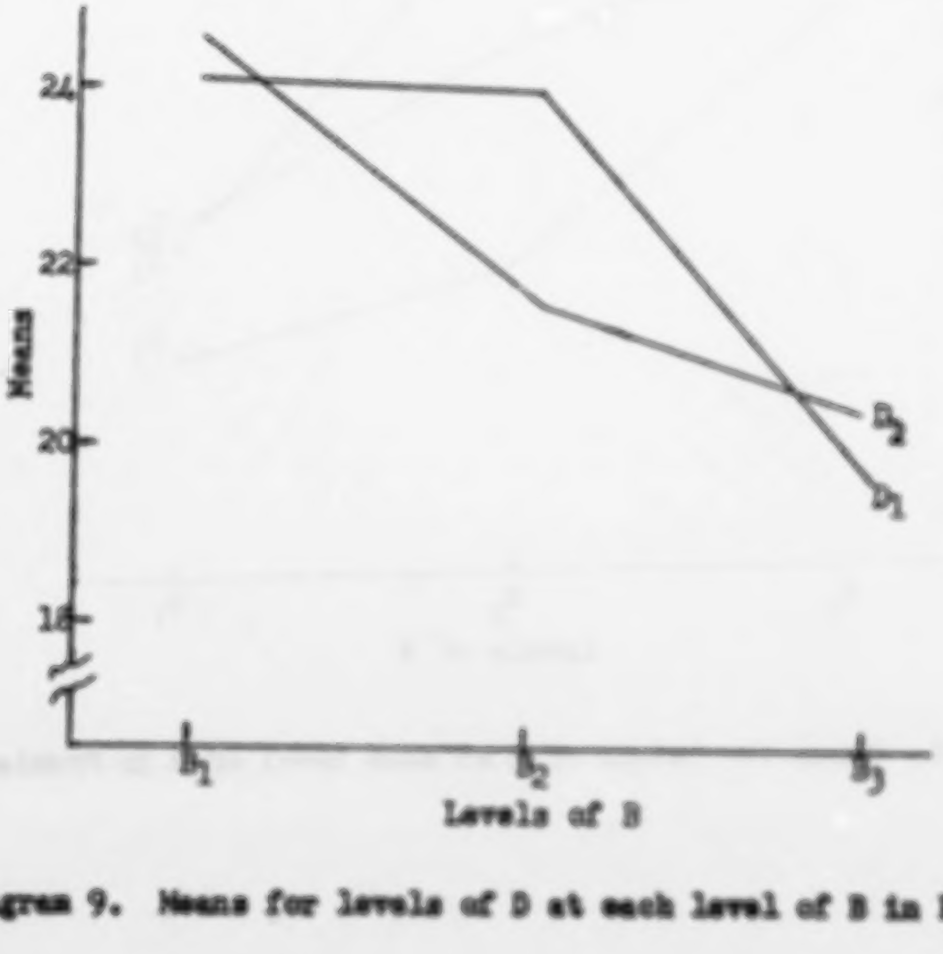

Diagram 9. Means for levels of D at each level of B in Problem 5

As the following table demonstrates, the expected relationship between deviation indexes and *F* ratios did, in general, hold true. With one exception, as the deviation indexes get larger, the *F* ratios get smaller and films are more limited in the scope of their effectiveness. Hence, it can be concluded that the degree of faithfulness of the film to the short story upon which it is based is a definite factor in determining whether the film will improve response.

| Story | Deviation Index | *F* Ratio | Film Effectiveness |
|---|---|---|---|
| The Cop and The Anthem | 39.5 | 6.39 | absolute |
| The Last Leaf | 75.1 | 11.04 | absolute |
| The Last Lesson | 78.2 | 3.00 | view-read only |
| The Tell-Tale Heart | 86.7 | 1.38 | low I.Q. only |

The results for "The Last Leaf" do not conform to the pattern exhibited by the other three stories. While its *F* ratio suggests that it was the most effective story, its deviation index is only slightly smaller than that of "The Last Lesson," which had but limited effectiveness. On the other hand, "The Cop and the Anthem," which, judged by its deviation index, is much more faithful to its source than is "The Last Leaf," yielded a much lower *F* than the latter.

Two circumstances may explain these anomalies. One is the fact that "The Last Leaf" was the second story to which the subjects were exposed in the experiment, whereas "The Cop and the Anthem" was the fourth. By the time the students were presented with the latter, some of the novelty of the experiment, which probably made them especially alert at the beginning of the series, had worn off. Therefore, the effect of the experimental environment *per se* - the so-called "Hawthorne" effect - was operating to the greater advantage of "The Last Leaf."

Another circumstance which may explain the anomalous position of "The Last Leaf" is the fact that, as indicated in the following table based on a sample of fifty-four subjects - one from each of the cells in the experimental design -, it was previously known to comparatively few of the students:

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1. By "absolute" is meant that the film was effective in improving response for all subjects regardless of the sequence of the viewing and reading, age, sex, and I.Q. The A factor did not interact with any of the other variables.

| Story | Previous Knowledge | No Previous Knowledge |
|---|---|---|
| The Cop and the Anthem | 19 | 35 |
| The Last Leaf | 5 | 49 |
| The Last Lesson | 15 | 39 |
| The Tell-Tale Heart | 21 | 33 |

The significance of this lies in the fact that Lumsdaine[1] found that the films were more effective for those who had not known the story before encountering it in the experiment. The fact that a far larger proportion of the students already knew "The Cop and the Anthem" than knew "The Last Leaf" may account for the higher F ratio for the latter even though one might expect the opposite on the basis of the deviation indexes.

## Summary

The data were analyzed by means of the analysis of variance technique, specifically a 3 x 3 x 3 x 2 factorial design with equal replications. The four factors and their various levels combined to form fifty-four experimental conditions or cells. Four observations from each cell were used in the analysis, a total of 216 for the entire experiment. Ten analyses of variance were made, each based upon a different set of test scores and designated as follows: Problem 1 - all stories, all aspects of response; Problem 2 - "The Last Lesson," all aspects of response; Problem 3 - "The Last Leaf," all aspects of response; Problem 4 - "The Tell-Tale Heart," all aspects of response; Problem 5 - "The Cop and the Anthem," all aspects of response; Problem 6 - all stories, enjoyment aspect only; Problem 7 - all stories, identification aspect only; Problem 8 - all stories, comprehension aspect only; Problem 9 - all stories, vocabulary only; and Problem 10 - all stories, all aspects of response, reading level used instead of I.Q. as a variable. The .05 level was used in determining significance of $F$ ratios. The means of significant factors were analyzed further by use of Duncan's new multiple range test.

The statistical analysis reveals that, taking the stories as a whole, students who view a film version of a short story as well as read it respond better than those who only read. The mean scores of those who viewed the films were an average of 6.6 points higher than the scores of those who only read. However, the degree of improvement varies from story to story and from one aspect of response to another. Among the stories, both the read-view and view-read groups improved in their response to "The Last Leaf" and "The Cop and the Anthem;" only the view-read group improved in response to "The Last Lesson;" and film-viewing in itself had no significant effect at all on response to "The Tell-Tale Heart." Among aspects of response, both of the film-viewing groups scored higher in enjoyment than did the control group, only the view-read group improved in comprehension, and film-viewing in itself had no significant effect on knowledge of vocabulary or on identification with characters. Every significant difference between the film-viewing groups and the read-only control group indicates an improvement in response on the part of the former. Although there are some instances in which a film-viewing group scored lower than the control group, in none of them is the difference between means large enough to be statistically significant.

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[1] Arthur Lumsdaine, "Gauging Effects of Film on Reading Interests," Learning from Films, Chapter 20. Vide supra, p. 21.

Statements about the effects of the motion pictures must be further qualified in light of several significant interactions between method of exposure to the stories and the other factors. In the case of "The Tell-Tale Heart" there is interaction with I.Q. Examination of the nature of this interaction reveals that seeing the film helped improve the response of low I.Q. students but had no significant effect on middle and high I.Q. students. In the case of identification there is also interaction with I.Q. and a separate interaction with sex. These interactions indicate that film-viewing increased the amount of identification for high I.Q. students, had no effect on middle I.Q. students, and reduced the amount of identification for low I.Q. students; reduced identification among boys, but raised it among girls.

Method of exposure to the story also interacts with sex and I.Q. in the case of comprehension. Here we have a separate interaction between method of exposure to the stories and sex and a triple, method-of-exposure X sex X I.Q., interaction. Taking the interaction with sex alone, we note that film-viewing had no significant effect on the girls' comprehension but it had the very decided effect of improving boys' comprehension. Whereas in the read-only group, girls outscore boys by almost ten points, in the film-viewing groups there is only a .1 point difference between the sexes. The entry of I.Q. into interaction with both sex and method of exposure to the story leads to the observation that the effects of films in improving comprehension applies only to low and middle I.Q. boys. High I.Q. boys, like girls at all I.Q. levels, are not significantly affected by the motion pictures in this regard.

The results of the statistical analysis sustain the hypothesis that "students who view the film before reading respond differently from those who view the film after reading." Although there are no *significant differences* between the film-viewing groups, every difference is in favor of the students who viewed the film before reading. Furthermore, in the matter of comprehension and response to "The Last Lesson," only the view-then-read group scored significantly higher than the control group. Therefore, it may be concluded that the view-then-read sequence is somewhat more effective than the read-then-view sequence.

Considering only the main effects of the organismic variables, I.Q., age, and sex, the results of the experiment sustain the hypothesis that differences in response are related to differences in these variables. I.Q. is the most potent factor affecting response, much more potent, even, than method of exposure to the stories. In only two problems, enjoyment and identification, is I.Q. not a significant factor. In every other problem the analysis shows that high I.Q. students respond better than those of middle I.Q.; middle I.Q. students respond better than those of low I.Q. The age factor is also significant in every problem except enjoyment and identification. In general it can be stated that older students respond better than younger ones irrespective of sex or method of exposure to the stories. As for the sex factor, girls in general respond better than boys. Among the stories, they outscored the boys most in "The Last Leaf;" among the various aspects of response, they significantly outscored the boys only in enjoyment.

The presence of interactions necessitates qualification of statements made about the effects of organismic variables. The nature of interactions between these variables and method of exposure to the stories has already been noted. We consider now interactions among only the organismic factors themselves.

Age and I.Q. interact in problem 1 (all stories, all asprects of response), problem 3 ("The Last Lesson"), and problem 8 (comprehension). In all three a similar pattern of interaction is revealed: low I.Q. students reach a peak of performance when they attain the middle age level and do not improve as they get older, whereas middle and high I.Q. students continue, in varying degrees, to improve with age. As regards "The Last Lesson" and comprehension, analysis of the interaction shows that the middle (average) I.Q. group "catch up" with the high I.Q. group at the high age level. Low and high I.Q. students exhibit the same pattern of development in these two problems: they both reach a peak of performance at the middle age level and do not respond better when they get older, whereas the middle I.Q. students improve throughout the age span.

The results for "The Cop and the Anthem" show an interaction between I.Q. and sex. Middle I.Q. boys respond better than middle I.Q. girls, but there are no significant differences between the sexes at the other two I.Q. levels.

A limited study of reading ability as an organismic variable instead of I.Q. was made in problem 10, which is based upon the total scores for all stories, all aspects of response. The results for this problem are very similar to the results for problem 1, which uses the same type of score with I.Q. as a factor. In both, the film-viewing groups scored higher than the control group; there was no significant difference between the film-viewing groups; the I.Q. or reading level was by far the most powerful factor; the high and the middle age groups responded better than the low age group; and girls responded better than boys. However, there was no significant interaction between reading level and other variables, whereas I.Q. did interact with age.

The results also suggest that there is a relationship between the faithfulness of a film to the short story upon which it is based, as represented by the deviation index, and its effectiveness in improving response, as represented by the *F* ratio. In general, the more faithful the film the more effective is it in improving response. However, the results for "The Last Leaf" indicate that additional factors relating to the stories themselves, such as extent to which the story was already known before the subjects encountered it in the experiment and the order in which the stories are presented, also may affect response.

# CHAPTER VII

## GENERAL SUMMARY AND CONCLUSIONS

This chapter presents a general summary of the purposes, procedures, and results of the study and certain general conclusions derived from them.

### General Summary

The purpose of the investigation is to determine how junior high school students' response to short stories is affected by their exposure to motion picture versions of the stories. In order to accomplish this general purpose, four sub-problems are attacked: (1) selecting aspects of narrative fiction to which students are expected to respond, (2) constructing tests for measuring response, (3) presenting the experimental materials to the students and (4) discovering relationships and interactions among the stimulus, response, and organismic variables.

The study is designed to test the following specific hypotheses:

(1) Students who view a film version of a short story as well as read it respond differently from those who only read.

(2) Students who view the film before reading respond differently from those who view the film after reading.

(3) Differences in response are related to differences in age, sex, and I.Q.

The study is limited to short stories of some literary merit which have been made into short motion pictures extant on 16 mm film. The population used was limited to students in Madison School, Newark, New Jersey. All students in the junior high division, grades 7, 8 and 9, participated, plus sixty-seven sixth graders, who were included to increase the size and age span of the population. A total of 452 students participated in the experiment. Responses were limited to those that could be measured by means of a multiple-choice test, uninfluenced by class discussion or other teaching activity. Organismic variables considered in the present study are confined to I.Q., age, sex and, to a limited degree, reading level.

Although the question of response to literature is recognized as a basic one and a number of works have been published dealing with it in general terms, there have been comparatively few scientifically controlled experiments or research efforts in this area. However, authors of literature tests have been particularly concerned with the subject and have approached it with a view to measuring acquaintance with facts about literary works or response to specific pieces of writing or a combination of the two. Investigators of response to specific literary selections have emphasized either recognition of merit or the experience of the reader as the basic objective at which the measuring device should be directed. Experts in the field of reading also have shown a continuing interest in response as a part of the overall reading process; and they have identified a number of abilities, skills and behaviors by which response may be gauged. The work done by these previous investigators established the feasibility of constructing the test instrument required for the present study.

Four stories were used in the experiment: O. Henry's "The Last Leaf" and "The Cop and the Antehm," Daudet's "The Last Lesson" and Poe's "The Tell-Tale Heart." The texts were reproduced in a uniform format to facilitate handling of materials and to remove differences in typography as a factor which might influence response. Comparative analyses of the content of the stories and their motion picture versions were made to determine the faithfulness of the latter to their literary sources, with the amount of deviation expressed as a deviation index. Based upon the deviation indexes, shown in parentheses, the films rank in the following order, starting with the most faithful: "The Cop and the Anthem" (39.5), "The Last Leaf" (75.1), "The Last Lesson" (78.2), and "The Tell-Tale Heart" (86.7).

The experience of the reader with the literary work rather than the recognition of merit was the approach used in determining the objectives for the tests. The investigator chose four aspects of response as the objectives: (1) comprehension, (2) enjoyment, (3) identification with characters and (4) knowledge of word meanings. "Comprehension" included the following behaviors and abilities:

1. Recalling the gross facts of the narrative.
2. Grasping meanings inherent in the writing but not overtly stated.
3. Understanding motivation of characters.
4. Recognizing underlying ideas or themes.
5. Discerning the setting of the story.
6. Being aware of the elements of narrative structure.

"Enjoyment" is defined as satisfaction in the reading as shown by the desire to read more of the same kind of story. By "identification" is meant the process by which the reader puts himself in the place of a character in the story and feels that what is happening to the character is happening to him. The specific objectives were derived from the nature of fiction and the short story as expounded by literary cirtics; comments on the nature of the short story and proper response to it set forth in textbook anthologies; and the work of reading experts and constructors of previous literature tests in identifying the abilities, skills and behaviors inherent in response.

A separate test was developed for each story. Each test has thirty-nine items. Part I of each test employs a questionnaire technique to measure enjoyment and identification, with three items for each of these aspects of response. Part II consists of twenty-eight items devoted to comprehension and five to knowledge of word meanings. The final versions of the tests were based upon a try-out of preliminary versions on a group of students in a neighboring junior high school and upon criticisms made by fifteen expert English teachers.

Data relating to the organismic variables, I.Q., age, sex and reading level, were collected by means of a questionnaire filled out by the students and by consulting school records for data of which the students themselves were unaware. Although the aforementioned are the only organismic variables considered in the present study, the questionnaire also yielded data on voluntary reading, television viewing, movie viewing, and socio-economic status of parents.

Data on the response variable were acquired by bringing together the population and the experimental materials to perform the experiment. Three groups were formed on the basis of method of exposure to the stories: Group A, the control group - only read; Group B - read, then viewed; Group C - viewed, then read. The groups were equated precisely on the basis of sex and by randomization for other characteristics. The experiment was performed on four Wednesday mornings. A ninety-minute block of time was used for each story, starting with "The Last Lesson" and continuing on the following Wednesdays with "The Last Leaf," "The Tell-Tale Heart," and "The Cop and the Anthem."

On the basis of I.Q., age and reading level, three groups were set up: "high," "middle," and "low." The limits of the I.Q. and age groups were determined by the rank order distribution of population scores in these areas. Those in the top third were classified as "high," those in the center third as "middle," and those in the lower third as "low." The medians of the I.Q. groups were respectively, 117, 102, and 82. The medians of the age groups were respectively, fourteen years, ten months; thirteen years, eight months; and twelve years, four months. As for the reading-level groups, students a year or more above grade in reading ability were put into the "high" group; those a year or more below grade, into the "low" group; and those in between these two extremes, into the "middle" group.

The data were analyzed by the statistical technique known as analysis of variance. Specifically, a 3 X 3 X 3 X 2 factorial design with equal replications was set up. Four observations were used for each of the fifty-four cells inherent in the design, a total of 216 for the entire experiment. Ten analyses of variance were made: one for each of the four stories, one for each of the four aspects of response the tests were designed to measure, one for the total scores of all stories, and one for the total scores of all stories, with reading level used instead of I.Q. as a variable. The means of three-level factors revealed to be significant by the analyses of variance were compared further by Duncan's new multiple range test. The .05 level of significance was used in both the analyses of variance and Duncan's test. The nature of significant interactions was shown by means of tables and graphs.

## Conclusions

Within the limitations of the investigation, the results sustain the hypotheses the experiment was designed to test. Students who view a film version of a short story as well as read it respond differently from those who only read; students who view the film before reading respond differently from those who view the film after reading; and differences in response are related to differences in age, sex, I.Q., and reading level.

Taking the experiment as a whole - total scores for all stories, all aspects of response considered - film-viewing, either before or after reading, improves response. This conclusion holds true for boys as well as girls, for high I.Q. students as well as low I.Q. students, for younger students as well as older ones, for good readers as well as poor readers, for there is no interaction here between method of exposure to the stories and any other variables.

When, however, we examine the results for each story and each aspect of response, we must qualify considerably our conclusions about the effects of motion pictures. For one story, "The Last Lesson," film-viewing improves the response only of those who view before reading. For another, "The Tell-Tale Heart," film-viewing improves the response only of low I.Q. students. For "The Last Leaf" and "The Cop and the Anthem," film-viewing is effective absolutely. On the other hand, none of the films significantly impair response to the short stories.

Similarly, among the various aspects of response, although the films increase the enjoyment of all subjects regardless of I.Q., age or sex, they improve identification only for some of the I.Q. groups and for girls. For low I.Q. students and for boys, the films impair identification. As regards comprehension, conclusions about the effects of motion pictures must be qualified by reference to specific sex and I.Q. groups. Although they have no effect on girls' comprehension, they do raise boys' comprehension. As a result, the marked superiority of girls over boys in comprehension based upon reading alone is changed to equality of achievement through the use of films. This conclusion applies only to middle and low I.Q. boys, however. As regards knowledge of word meanings, the films have no significant effect at all.

Of the two methods of employing films - before the reading or after the reading - the former is slightly more effective.

I.Q. is a much more powerful factor affecting response than is method of exposure to the stories. In every problem except the one dealing with enjoyment alone, I.Q. is significant as either a main effect or an element of an interaction. Although, in general, high I.Q. subjects respond better than middle I.Q. subjects and middle I.Q. better than low I.Q., there are interesting interactions between I.Q. and age in response to "The Last Leaf," in comprehension, and in total response to all stories. Both the high and the low I.Q. students reach a peak of performance at the middle age level and do not perform significantly better as they get older, whereas the middle I.Q. students improve significantly at each successive age level. At the high age level, average I.Q. students "catch up," as it were, with their brighter classmates in the high I.Q. group in ability to comprehend the stories and to respond to "The Last Lesson"

In general, older students respond better than younger ones regardless of method of exposure to the stories. However, conclusions about the effects of age must be qualified by reference to specific I.Q. levels as noted in the preceding paragraph.

Girls generally respond better than boys regardless of method of exposure to the stories. However, as was pointed out earlier in this chapter,[1] film-viewing enables boys to comprehend as well as girls. The motion pictures have a similar effect in eliminating sex differences when it comes to identification.

Although given but limited treatment in the investigation, reading level shows itself an even more potent factor than I.Q. in affecting response. Good readers respond better than average readers; average readers respond better than poor readers. This holds true regardless of method of exposure to stories, age level, or sex.

The results also suggest that there is a relationship between faithfulness of the film representation to the short story upon which it is based and its effectiveness in improving response. In general, the more faithful the film, the more effective is it in improving response. However, the results for one of the stories indicate that other factors relating to the stories themselves affect response.

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[1] *Supra*, p. 91.

## CHAPTER VIII

## DISCUSSION

This final chapter will present some general thoughts on the application of the findings to broader issues to which the problems dealt with in the present study relate. It points out some implications of the results of the investigation for teaching practices. It also contains suggestions for further research and for improving the procedures used in the experiment.

### Application of the Findings

Although the present study, as an effort to discover whether there is a valid basis for the use of films to enhance the teaching of literature, approaches the problem from the point of view of *print* as the primary medium of literature, it does not assume any inherent superiority of one medium over the other. The essential element with which teachers are concerned is the *experience* students undergo as a result of their exposure to literature, rather than the *medium* through which experience comes. As John Dewey points out:

> . . . In common conception, the work of art is often identified with the building, book, painting or status in its existence apart from human experience. Since the actual work of art is what the product does with and in experience, the result is not favorable to understanding . . . . When an art product once attains classic status, it somehow becomes isolated from the human conditions under which it was brought into being and from the human consequences it engenders in actual life-experience.[1]

"The human consequences it engenders is actual life-experience" are, ultimately, the *raison d'etre* of everything that is done in the school.

Now, it is difficult indeed to prove that the experience a child acquires from reading a certain story is necessarily better than the one he acquires from viewing a film or *vice versa*. There are claims, on the one hand, that ". . . the film, in spite of its origin in the studio factory, is as capable as poetry and letters of achieving beauty and distinction; there is no aspect of human emotion which the sound film cannot present, and its qualities are equally well adapted to wit and humor;"[2] and, on the other, that "This is not to be interpreted as an argument for the photoplay . . . and certainly not as a proposal for substituting films for books. Most of us are persuaded that book literature is, both typically and at its best, superior to the photoplay;[1] but a frame of references and techniques of appraisal for determining which of these is the more valid point of view require so broad a context that the problem can probably be approached only as a theoretical one. The present state of our knowledge in these matters is such, that, faced with the question, "What would an individual lose (or gain) if he used only film and the other mass media as sources of his literary experiences compared with one who used only printed materials?" we can, in truth, answer only "We do not know."

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[1] *Art as Experience*, p. 3.

[2] Roger Manvell, *Film*, p. 25.

We do know, however, that with the ever-increasing extension of schooling to more and more children and the growing power of the schools to retain their students through the twelfth grade, it is inevitable that we should be dealing with ever larger numbers of students for whom reading is a difficult and minor source of literary experience. Even in the adult world, the relative decline in the number of novels published each year and the amount of magazine space devoted to fiction indicates the lessened importance of print as a medium of narrative literature. That children - and adults - enjoy and want narrative is undeniable, as shown by their addiction to television and movies; that the schools should insist upon the printed page as the only or the best medium of narrative for all students is, perhaps, merely the result of adherence to tradition and administrative expediency. As Henri Laugier points out:

> Il est toujours difficile pour les gen d'âge, malgré tout leur effort, malgré tout leur volonté, de conserver le contact qu'ils souhaitent ardemment avec la jeunesse. C'est plus difficile que jamais; un abime dont on n'a pas sondé la profondeur, separe les generations formées par le livre et les generations formées par le cinéma.[2]

He goes on to say that, if sound film had been invented before printing, the former would now be used in our schools for teaching Shakespeare and Homer, Leibnis and Descartes and for developing the social and intellectual traits we value.

The investigator hopes that his experiment may help in arriving at a solution of the broader, more complex problems mentioned above. By leading to the conclusion that film-viewing does not diminish interest in reading and can improve response, the results of the study may make the film medium more acceptable to those school administrators and teachers of English who regard movies and the other new media of literature as onslaughts upon the perogatives of the printed word, which must be defended at all costs. Thus may the way be opened for a thorough appraisal of each of the media available to the teacher

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1. Walter Barnes, Introduction to William Lewin, *Photoplay Appreciation in American Schools*.

2. Preface to Gilbert Cohen-Seat, *Essai sur les Principes d'une Philosophie du Cinéma*, Paris: Presses Universitaires de France, 1946; cited in André Lang, *Le Tableau Blanc*, p. 7.

of literature in order to determine what it can do best for our students and to arrive at criteria of performance and effectiveness appropriate to it.

### Implications for Teaching

Although the results of the investigation support the general hypothesis that film-viewing improves response, the classroom teacher is concerned with the effects of *a* film, not films in general, upon *a* class, not a school population in general. In the specific teaching situation the various qualifications of the general hypothesis take on particular importance, and the teacher must realize that, despite the validity of the general hypothesis, he cannot assume that every film version of a short story will be effective with every group. The findings suggest that the motion picture version of "The Last Lesson" will be ineffectual in raising test scores, "The Tell-Tale Heart" will be of help only to low I.Q. students, and "The Last Leaf" and "The Cop and the Anthem" will be effective for all students.

The findings reaffirm the importance of the teacher's previewing a film or otherwise becoming acquainted with its content in order to determine its faithfulness to its literary source. The greater the deviation of the movie from the short story upon which it is based, the less can the teacher expect it *per se* to improve response as measured by a test based upon that short story.

The teacher must also consider the nature of his class and the specific aspect of response with which he is concerned in deciding whether to use a film to supplement the written text. As regards comprehension, which was the major element in the tests, a film is likely to be of greatest benefit to boys of average and low I.Q. For all types of students it will probably increase rather than decrease enjoyment of the story as measured by interest in further reading. For high I.Q. students and for girls a motion picture will probably increase identification with the characters in the story, but will reduce it for low I.Q. students and for boys. In the matter of improvement of knowledge of words, however, it is likely to have no effect at all.

The results also suggest that it is somewhat better procedure to show the film before the reading takes place rather than *vice versa*, although this is not a crucial matter.

It must be remembered, however, that the present study is based upon a situation which excluded the teacher. In the hands of the skillful teacher, even a movie which varies greatly from its literary source can be used to give students additional insights into the original story. The very existence of these differences can serve to emphasize, through contrast, elements in the narrative text. It should also be remembered that the tests used in the investigation measured only certain selected aspects of response; and, although a film may have been ineffectual when measured by this standard, it may have value for other aspects of response.

Certain other findings, although not related directly to the effects of film-viewing, also have implications for the teaching of short stories in the junior high school. The phenomenon of average I.Q. students in the high age group comprehending as well as their age peers of high I.Q. suggests that in the ninth grade these two groups could handle the same stories. At the lower age levels, covering the seventh and eighth grades, differences in comprehension among I.Q. groups are great enough to justify different literary offerings for each group. The failure of the high and low I.Q. students to improve significantly in comprehension as they move into the oldest age group, whereas average I.Q. students do so improve, implies, perhaps, that teaching in the eighth and ninth grades was geared to the average I.Q. group and that special provisions should be made for the others.

## Topics for Further Research

The investigation has left unanswered a number of questions which suggest topics for further research.

1. How do the effects of film-viewing compare with the effects of various kinds of teaching activity on the part of the school staff? The experiment herein described involved no class discussion or other forms of teaching activity. It would be interesting to determine whether teaching of the story is as effective, less effective, or more effective than film-viewing in improving response.

2. What are the further ramifications in the relationship between a film's deviation from its literary source and its effectiveness in improving response? Can deviation be quantified so as to provide a basis for predicting the probable effect of a film by comparing its content with that of a short story? What is the relationship between quantitative and qualitative differences? What is the relationship between deviation and other variables: age, sex, I.Q. of subjects; previous knowledge of story, and other factors?

3. What is the effect of film-viewing upon students who had no previous knowledge of the stories as compared with those who already knew the tales when they encountered them in the experiment? As was indicated previously,[1] there is some evidence that films have a greater effect upon subjects who had no previous knowledge of the story. It would be of interest to note to what extent this is true for the present experiment.

4. What is the relationship between method of exposure to the stories and organismic variables other than I.Q., age, and sex? The investigation yielded data for considering movie-viewing, television-viewing, voluntary reading, and socio-economic status of parents as other organismic variables.

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[1] *Vide supra*, p. 83.

5. How does film-viewing affect aspects of response other than those considered here? A number of literature tests are based upon the concept of "recognition of merit" as the central aspect of appreciation. They test the subject's ability to discriminate among the good, the less good, and the bad and to discern what distinguishes one from the other. This element of appreciation was not considered at all in the present experiment.

6. Can stories be used to enhance students' ability to respond to films? As indicated earlier, the investigator assumes no inherent superiority of the printed page over the film as a medium for literature. He suggests here an experiment in which the film is the primary medium, with tests based on the content of the film rather than the content of the short story.

7. Does the "catching up" of average I.Q. students with high I.Q. students at the high age level in ability to comprehend persist? Do average and above average I.Q. students maintain this parity in comprehension of short stories as they continue on through the senior high school grades?

## Improvement of Procedures

A major improvement in the procedures used in the present experiment has to do with the texts of the stories. Several of the evaluators of the tryout materials commented that the size of the print used in the story texts was too small for junior high school students. Although there were no complaints on this score from any of the teachers who administered the reading part of the experiment, it would seem advisable to use a type size deemed more suitable for students involved in the study.

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## APPENDICES

APPENDIX A: The Tests

APPENDIX B: Forms

APPENDIX C: Directions for Students and Administrators

APPENDIX D: Summaries of Individual Analyses of Variance

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## Appendix A: The Tests

"The Cop and the Anthem"

"The Last Leaf"

"The Last Lesson"

"The Tell-Tale Heart"

# THE COP AND THE ANTHEM

## Part I

1. Had you already known this story when you encountered it in this experiment?
   - a) yes
   - b) no

(Questions 2 and 3 are to be answered only by those who answered "yes" to question 1.)

2. In what form did you encounter it before?
   - a) book or magazine
   - b) movie
   - c) TV play
   - d) radio play
   - e) comic book
   - f) other than these (name it)

3. How long ago?
   - a) less than a month
   - b) between one and six months
   - c) between six months and a year
   - d) more than a year

(Question 4 is to be answered only by those who saw the movie as well as read the story as part of the experiment.)

4. Which version did you like better?
   - a) print
   - b) film

5. Would you like to read more stories like this one?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) I definitely would not

6. Would you like the library to get books with more stories like this one?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) Idefinitely would not

7. This story appears in a paperback collection of similar stories that costs 35¢. Would you order a copy if you could?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) I definitely would not

8. Do you think that a series of incidents like those presented in the story could have happened in real life?
   - a) entirely likely
   - b) possible but not very likely
   - c) entirely unlikely
   - d) don't know

9. Which character did you feel was most like you?
   - a) Soapy
   - b) the waiter
   - c) the man with the umbrella
   - d) one of the policemen
   - e) none
   - f) some other one (name him)

10. Which character would you want to be like in real life?
    - a) Soapy
    - b) the waiter
    - c) the man with the umbrella
    - d) one of the policemen
    - e) none
    - f) some other one (name him)

11. Which character did you like best?
    - a) Soapy
    - b) the waiter
    - c) the man with the umbrella
    - d) one of the policemen
    - e) liked them all equally well
    - f) some other one (name him)
    - g) didn't like any of them

12. Which character did you dislike most?
    - a) Soapy
    - b) the waiter
    - c) the man with the umbrella
    - d) one of the policemen
    - e) disliked them all equally
    - f) didn't dislike any of them
    - g) some other one (name him)

## Part II

13. Who wrote "The Cop and the Anthem"?
    - a) Poe
    - b) Twain
    - c) Daudet
    - d) O.Henry

14. The story opened in
    - a) Times Square
    - b) Sheridan Square
    - c) Madison Square
    - d) Lincoln Square

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15. What was the season of the year?
   a) spring
   b) summer
   c) fall
   d) winter

16. When did the story take place?
   a) in the present day
   b) in the early 1900's
   c) in GeorgeWashington's time
   d) in some future time

17. The setting (time and place of the events) of this story was like the setting of
   a) "The Last Lesson"
   b) "The Last Leaf"
   c) "The Tell-Tale Heart"
   d) none of these

18. Soapy's main purpose at the beginning of the story was to
   a) find a job
   b) find a place to spend the next 3 months
   c) avoid being arrested
   d) get a good meal

19. Soapy wanted to get to
   a) Palm Beach, Florida
   b) Blackwell's Island, a city prison
   c) Manhattan Island
   d) Sea Island, a vacation resort

20. What was Soapy's "home"?
   a) a beach on the Riviera
   b) a cheap hotel
   c) a Salvation Army lodging house
   d) a park bench

21. Soapy's first attempt was
   a) getting a meal at an expensive cafe
   b) breaking a store window
   c) being disorderly in the street
   d) kicking a policeman

22. His attempt at disorderly conduct failed because
   a) no one saw him
   b) the policeman thought he was a college boy
   c) the policeman was a friend of his
   d) the judge found him not guilty

23. His attempt in the cafe failed because
   a) he paid for part of the bill
   b) he didn't know what to order
   c) his clothes showed he was a tramp
   d) his way of talking showed he was a tramp

24. After failing in his attempt in the cafe, the very next thing Soapy tried was
   a) annoying a young woman
   b) acting like a disorderly person
   c) going to church
   d) none of these

25. The man with the umbrella refused to call the police because he
   a) had stolen it himself
   b) was afraid of Soapy
   c) felt sorry for Soapy
   d) didn't want it

26. The young woman responded to Soapy's advances by
   a) calling a cop
   b) running away
   c) hitting him with an umbrella
   d) accepting his invitation

27. Soapy's last attempt was
   a) stealing an umbrella
   b) breaking a store window
   c) kicking a policeman
   d) annoying a young woman

28. To whomdid Soapy intend to go for a job?
   a) a restaurant owner
   b) a stock broker
   c) a fur merchant
   d) a priest

29. Soapy didn't like charity institutions because
   a) they didn't respect his privacy
   b) there were none
   c) he was ashamed to be seen in one
   d) they had never helped him

30. As a tramp, Soapy was
   a) like most other tramps
   b) shabbier and rougher than most tramps
   c) more elegant and refined than most tramps
   d) not at all like a tramp

31. Which of the following fits Soapy best?
   a) independent
   b) rough, crude
   c) stupid
   d) cowardly

32. Of Soapy's past, we know that he
   a) had always been a hobo
   b) attended Yale University
   c) had been in the fur business
   d) came from a respectable family

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33. At the beginning of the story how did Soapy feel toward policemen?
    a) friendly
    b) fearful
    c) angry
    d) jealous

34. The police as presented in this story were
    a) very intelligent
    b) always just
    c) highly efficient
    d) none of these

35. Judging by vocabulary and manner of speaking, how did Soapy's education compare with that of the policemen?
    a) better
    b) about the same
    c) worse
    d) can't tell from the story

36. In the achievement of his original purpose, Soapy was
    a) unsuccessful
    b) successful
    c) partly successful
    d) can't tell from the story

37. What made Soapy change his original purpose?
    a) the sound of a Salvation Army Band
    b) advice a cop gave him
    c) the offer of a job
    d) the sound of a church organ

38. In the future Soapy will most likely
    a) give up his life as a tramp
    b) continue to live as a tramp
    c) have more respect for the police
    d) attend church regularly

39. The story brings out the idea that
    a) crime does not pay
    b) when we finally get what we want, we sometimes find we no longer want it
    c) goodness is always rewarded; evil is always punished
    d) once a tramp, always a tramp

(In items 40-44 pick out the best meaning for the underlined word in each sentence. All the sentences were taken from the story.)

40. Jack Frost is kind to the denizens of the Square
    a) builders
    b) employers
    c) inhabitants
    d) tourists

41. You must pay for every benefit received at the hands of philanthropy.
    a) charity
    b) happiness
    c) wickedness
    d) the police

42. He betrayed the fact that the minutest coin and himself were strangers
    a) smallest
    b) largest
    c) most expensive
    d) thinnest

43. He had known it well in days when life contained such things as mothers and roses - immaculate thoughts and collars.
    a) beautiful
    b) tender
    c) spotless
    d) new

44. Strong and ready hands averted the ignoble fate of the menaced mallard.
    a) a kind of hammer
    b) a homeless person
    c) a kind of wild duck
    d) a restaurant owner

45. Which of the following passages is written in a manner most like "The Cop and the Anthem"?

a) In a certain city lived Martin Wilson, a tailor. He lived in a cellar, a miserable little hole with one window. The window looked up toward the street, and through it Martin could just see the passers-by.

b) Calliope Catesby was in his humors again. Ennui was upon him. This good promontory, the earth, was to him no more than a pestilent congregation of vapors. Over night Calliope had hung out signals of approaching low spirits. He had become capricious and fault-finding in conversation.

c) The blow was arrested by the hand of my wife. Goaded, by the interference, into a rage more than demoniacal, I withdrew my arm from her grasp and buried the axe in her brain. She fell dead upon the spot without a groan.

d) "Can't you sleep, Lieutenant?" he asked.
"No."
"I can't sleep either."
"What's the matter?"
"I don't know. I can't sleep."
"You feel all right?"
"Sure. I feel good. I just can't sleep."

WHEN YOU HAVE FINISHED THE TEST, TURN YOUR ANSWER SHEET FACE DOWN.

# THE LAST LEAF

## Part I

1. Had you already known this story when you encountered it in this experiment?
   - a) yes
   - b) no

(Questions 2 and 3 are to be answered only by those who answered "yes" to question 1.)

2. In what form did you encounter it before? (You may choose more than one.)
   - a) book or magazine
   - b) movie
   - c) TV play
   - d) radio play
   - e) comic book
   - f) other than these (name it)

3. How long ago?
   - a) less than a month
   - b) between one and six months
   - c) between six months and a year
   - d) more than a year

(Question 4 is to be answered only by those who saw the movie as well as read the story as part of the experiment.)

4. Which version did you like better?
   - a) print
   - b) film

5. Would you like to read more stories like this one?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) I definitely would not

6. Would you like the library to get books with more stories like this one?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) I definitely would not

7. This story appears in a paperback collection of similar stories that costs 35¢. Would you order a copy if you could?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) I definitely would not

8. Do you think that a series of incidents like those presented in the story could have happened in real life?
   - a) entirely likely
   - b) possible but not very likely
   - c) entirely unlikely
   - d) don't know

9. Which character did you feel was most like you?
   - a) Sue
   - b) Johnsy
   - c) Behrman
   - d) none
   - e) some other one (name him)

10. Which character would you want to be like in real life?
   - a) Sue
   - b) Johnsy
   - c) Behrman
   - d) none
   - e) some other one (name him)

11. Which character did you like best?
   - a) like them all equally well
   - b) Sue
   - c) Johnsy
   - d) Behrman
   - e) some other one (name him)
   - f) didn't like any of them

12. Which character did you dislike most?
   - a) disliked them all equally
   - b) didn't dislike any of them
   - c) Sue
   - d) Johnsy
   - e) Behrman
   - f) some other one (name him)

## Part II

13. Who wrote "The Last Leaf"?
   - a) Poe
   - b) Twain
   - c) Daudet
   - d) O.Henry

14. When did the story take place?
   - a) in the present day
   - b) about fifty years ago
   - c) during the days of George Washington
   - d) in some future time

15. In what city did the story take place?
   - a) Chicago
   - b) London
   - c) Paris
   - d) none of these

GO ON TO NEXT PAGE

16. The disease involved in the story was
a) polio
b) tuberculosis
c) cancer
d) none of these

17. Sue and Johnsy were
a) mother and daughter
b) two girl friends
c) a brother and sister
d) boy friend and girl friend

18. Through the bedroom window one could see a
a) street
b) small park
c) brick wall
d) none of these

19. Behrman had probably been born in
a) Germany
b) the United States
c) France
d) Italy

20. Behrman's manner in dealing with other people was
a) calm
b) excited
c) gentle
d) cold

21. As an artist, Behrman was
a) very successful
b) a failure
c) good enough to make a living
d) misunderstood by others

22. How did Behrman feel about Johnsy?
a) very much concerned
b) indifferent, not at all concerned
c) angry because she interferred with his painting
d) He was in love with her.

23. Behrman was easily annoyed because
a) he didn't want to be bothered by other people
b) he had tuberculosis
c) he was unsuccessful as a painter
d) he couldn't understand English very well

24. Behrman's "masterpiece" was a painting of
a) a leaf
b) a cowboy
c) a bowl of fruit
d) a hermit miner

25. What happened to Behrman at the end of the story?
a) He died.
b) He finally painted his masterpiece and sold it for a large sum.
c) He went to Naples to continue painting
d) He became a model for other painters.

26. How old was Behrman compared with Sue and Johnsy?
a) old enough to be their father
b) about same age
c) younger than they
d) can't tell from the story

27. In her conversation with the doctor, what did Sue reveal about her feelings toward men?
a) She liked them very much.
b) She was afraid of them.
c) She had a very low opinion of them.
d) She didn't reveal anything.

28. Sue was drawing
a) a picture for her own amusement
b) a sketch of the Bay of Naples
c) illustrations for a magazine story
d) illustrations for an advertisement

29. Painters, as presented in this story
a) make a lot of money
b) have difficulty making a living
c) lead a life of luxury
d) are selfish people

30. Sue was afraid to see the last leaf fall because
a) it would spoil the view from the window
b) it would mean the vine was dead
c) she wanted it as a model for a painting
d) when it went, Johnsy would go too

31. The author says that Sue was "sketching a pair of elegant horseshow riding trousers and a monocle on the figure of the hero, an Idaho cowboy." From this we can tell that she
a) could draw very well
b) watched a lot of TV westerns
c) had probably lived on a ranch
d) had probably never seen a real cowboy

32. What was preventing Joanna from getting better?
a) noise made by other tenants
b) they couldn't get a doctor in time
c) there was no one to take care of her
d) she had no desire to get better

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33. Joanna's feelings about the last leaf were the result of
a) disappointment in love
b) lack of success as an artist
c) illness
d) hunger

34. Why didn't the last leaf fall?
a) The vine was stronger than Johnsy thought.
b) Sue fastened it to the vine so that it could not come off.
c) A miracle kept it on the vine.
d) It had been painted on the wall.

35. Joanna first showed she was on the way to recovery by asking for
a) painting things
b) food
c) brush and mirror
d) medicine

36. When Joanna said that she hoped to paint the Bay of Naples, we could tell that
a) she was going to die
b) the girls were no longer living in Greenwich village
c) she had regained her will to live
d) Behrman had made good his promise to take them away

37. The main point brought out by the story is that
a) drink is the source of all evil
b) what we believe may be more important than the actual facts
c) artists cannot be trusted in time of trouble
d) cleanliness is the key to good health

38. The success of the painters as presented in the story depended upon
a) the degree of originality in their work
b) the life-like quality of their work
c) the influence of friends
d) the demand for their work

39. This story resembles "The Last Lesson" in that
a) the same author wrote both
b) neither took place in the present day
c) the same kinds of people were presented in both
d) all of these

40. Judging by this story, how does the author feel about artists?
a) He thinks they are ridiculous.
b) He has great sympathy for them.
c) He considers them worthless.
d) He thinks they have no faults at all.

(In items 41-45 pick out the best meaning for the underlined word in each sentence. All the sentences were taken from the story.)

41. They found some scattered brushes and a palette with green and yellow colors mixed on it.
a) a stand for holding canvas on which an artist is painting
b) a special kind of picture frame
c) a board on which paints are prepared
d) a ladder used by artists

42. A persistent, cold rain was falling.
a) light
b) heavy
c) wintery
d) continuing

43. An old, old ivy vine, gnarled and decayed at the roots, climbed up the wall.
a) containing few leaves
b) containing many leaves
c) twisted
d) brown in color

44. The fever has left her morbid and full of strange fancies.
a) subject to gloomy thoughts
b) weak
c) dried out
d) without feeling

45. Sue looked solicitously out of the window.
a) anxiously
b) happily
c) quickly
d) secretly

WHEN YOU HAVE FINISHED THE TEST, TURN YOUR ANSWER SHEET FACE DOWN.

# THE LAST LESSON

## Part I

1. Had you already known this story when you encountered it in this experiment?
   a) yes
   b) no

(Questions 2 and 3 are to be answered only by those who answered "yes" to question 1.)
2. In what form did you encounter it before? (You may choose more than one.)
   a) book or magazine
   b) movie
   c) TV play
   d) radio play
   e) comic book
   f) other than these (name it)

3. How long ago?
   a) less than a month
   b) between one and six months
   c) between six months and a year
   d) more than a year

(Question 4 is to be answered only by those who saw the movie as well as read the story as part of the experiment.)
4. Which version did you like better?
   a) print
   b) film

5. Would you like to read more stories like this one?
   a) I definitely would.
   b) I probably would.
   c) I don't know.
   d) I probably would not
   e) I definitely would not.

6. Would you like the library to get books with more stories like this one?
   a) I definitely would.
   b) I probably would.
   c) I don't know.
   d) I probably would not.
   e) I definitely would not.

7. This story appears in a paperback collection of similar stories that costs 35¢. Would you order a copy if you could?
   a) I definitely would.
   b) I probably would.
   c) I don't know.
   d) I probably would not.
   e) I definitely would not.

8. Do you think that a series of incidents like those presented in the story could have happened in real life?
   a) entirely likely
   b) possible but not very likely
   c) entirely unlikely
   d) don't know

9. Which character did you feel was most like you?
   a) Franz
   b) the teacher
   c) none
   d) some other one (name him)

10. Which character would you want to be like in real life?
   a) Franz
   b) the teacher
   c) none
   d) some other one (name him)

11. Which character did you like best?
   a) liked them all equally well
   b) Franz
   c) the teacher
   d) some other one (name him)
   e) didn't like any of them

12. Which character did you dislike most?
   a) disliked them all equally
   b) didn't dislike any of them
   c) Franz
   d) the teacher
   e) some other one (name him)

## PART II

13. When did the story take place?
   a) in the present day
   b) in some future time
   c) during World War II. (1939-1945)
   d) during the late 1800's

14. The story place in a part of
   a) Holland
   b) Austria
   c) England
   d) none of these

15. At the time the story took place
   a) there was a war going on
   b) the country was in the midst of winter
   c) there was peace and prosperity in the country
   d) can't tell from the story

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16. Franz was afraid of being scolded because
- a) he had been truant
- b) he didn't know his lesson
- c) he had torn his book
- d) he had insulted the soldiers

17. As Franz passed through the square he was spoken to by the
- a) mailman
- b) soldiers
- c) blacksmith
- d) mayor

18. His curiosity was aroused most by
- a) what Wachter was doing
- b) the notice on the town hall
- c) the fisherman at the bridge
- d) what the soldiers were doing

19. What interested him more than school?
- a) the fields and woods
- b) the drilling of the soldiers
- c) the whistling birds
- d) all of these

20. Franz had hoped that his tardiness would be covered up by the
- a) noise made by the other pupils
- b) teacher's conversation with adults
- c) sound of the soldiers' trumpet
- d) the teacher's own tardiness

21. When he entered the room he was surprised by the fact that
- a) the teacher did not scold him
- b) his classmates were so serious
- c) the teacher was wearing his best suit
- d) all of these

22. For whom was this the last lesson?
- a) Franz
- b) Monsieur Hamel
- c) the Prussians
- d) the adults

23. The adults in the room felt
- a) happy
- b) sad
- c) cheerful
- d) angry

24. In what way did the teacher act differently on this day?
- a) He was more patient.
- b) He scolded the children more.
- c) He left out some of the lessons.
- d) He gave the children a holiday.

25. The adults were there because
- a) prizes were to be given out
- b) they wanted to see if the teacher was doing his job properly
- c) they were Prussian spies
- d) they wanted to thank the teacher

26. Monsieur Hamel said the people's greatest fault was
- a) spending too much money for drink
- b) putting their children to work at an early age
- c) putting off until tomorrow what they should do today
- d) not learning another language

27. The teacher blamed
- a) everyone except himself
- b) only the adults
- c) only the children
- d) everyone including himself

28. The teacher said that the key to an enslaved nation's freedom lies in
- a) keeping its native language alive
- b) working with the masters
- c) learning a new language
- d) none of these

29. The school in the story was different from yours in that
- a) the teacher was allowed to hit pupils
- b) it was in a small village
- c) several grades were in one room
- d) all of these

30. What language did the people know best?
- a) French
- b) German
- c) Dutch
- d) English

31. The Prussians spoke
- a) French
- b) German
- c) Dutch
- d) English

32. The teacher wrote on the blackboard
- a) That is all!
- b) France, Alsace! France, Alsace!
- c) Vive le Roi!
- d) Vive la France!

33. Who wrote "The Last Lesson"?
- a) Poe
- b) Twain
- c) Daudet
- d) O.Henry

GO ON TO NEXT PAGE

34. The author was probably a
- a) Frenchman
- b) Prussian
- c) Canadian
- d) none of these

35. When the teacher said to Franz, after he had failed to recite correctly, "they punishment will be great enough", he meant that Franz would be punished by
- a) his parents
- b) the Prussians
- c) his classmates
- d) none of these

36. Just before the lesson ended, Franz felt, "Never before had he (the teacher) seemed to me so tall." This meant that Franz
- a) was afraid of his teacher
- b) was ashamed of his teacher
- c) was glad that his teacher was going
- d) realized what a great man his teacher really was

37. Why did Franz find it so easy to understand his lessons?
- a) The teacher had given him a new book.
- b) The class was studying a subject he liked.
- c) He realized the importance of what he was being taught.
- d) He concentrated more because he was afraid of being scolded.

38. Why did the teacher dismiss the class by a "motion of his hand" instead of telling them to go?
- a) He didn't want the Prussians to hear.
- b) He couldn't talk because he was crying.
- c) Old Hauser told the class to go.
- d) None of these

39. In the future, Franz's feelings toward the Prussians will probably be
- a) the same as they were at the beginning of the story
- b) more favorable than at the beginning
- c) less favorable than at the beginning
- d)can't tell from the story

40. Which of the following ideas does the story bring out?
- a) A little knowledge is a dangerous thing.
- b) We appreciate something most when we can no longer have it.
- c) Clothes make the man.
- d) If you spare the rod, you will spoil the child

(In items 41 - 45 pick out the best meaning for the underlined word in each sentence. All the sentences were taken from the story.)

41. I saw a group of people; they loitered before the little grating.
- a) knelt and prayed
- b) danced and sang
- c) stopped and lingered
- d) sat and listened

42. What I would not have given then, had I been able to repeat the rule for the use of participles.
- a) a grammatical term, referring to certain verb forms
- b) a kind of farm tool
- c) a scientific term used in describing atoms
- d) a mathematical term, referring to addition and subtraction

43. What anguish must have filled the poor man's heart, as he thought of leaving all these things.
- a) happiness
- b) fear
- c) anger
- d) pain

44. And in all this, my poor Franz, you are not the chief culprit.
- a) one who leads another
- b) person guilty of a fault
- c) outstanding student
- d) one who comes late

45. But strangely enough, as Monsieur Hamel scrutinized me, there was no anger in his gaze.
- a) talked with
- b) examined
- c) laughed at
- d) nodded at

WHEN YOU HAVE FINISHED THE TEST, TURN YOUR ANSWER SHEET FACE DOWN.

# THE TELL-TALE HEART

## Part I

1. Had you already known this story when you encountered it in this experiment?
   - a) yes
   - b) no

(Questions 2 and 3 are to be answered only by those who answered "yes" to question 1.)

2. In what form did you encounter it before? (You may choose more than one.)
   - a) book or magazine
   - b) movie
   - c) TV play
   - d) radio play
   - e) comic book
   - f) other than these (name it)

3. How long ago?
   - a) less than a month
   - b) between one and six months
   - c) between six months and a year
   - d) more than a year

(Question 4 is to be answered only by those who saw the movie as well as read the story as part of the experiment.)

4. Which version did you like better?
   - a) print
   - b) film

5. Would you like to read more stories like this one?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) I definitely would not

6. Would you like the library to get books with more stories like this one?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - d) I definitely would not

7. This story appears in a paperback collection of similar stories that costs 35¢. Would you order a copy if you could?
   - a) I definitely would
   - b) I probably would
   - c) I don't know
   - d) I probably would not
   - e) I definitely would not

8. Do you think that a series of incidents like those presented in the story could have happened in real life?
   - a) entirely likely
   - b) possible but not very likely
   - c) entirely unlikely
   - d) don't know

9. Which character did you feel was most like you?
   - a) the murderer
   - b) the victim
   - c) none
   - d) some other one (name him)

10. Which character would you want to be like in real life?
   - a) the murderer
   - b) the victim
   - c) none
   - d) some other one (name him)

11. Which character did you like best?
   - a) liked them all equally well
   - b) didn't like any of them
   - c) the murderer
   - d) the victim
   - e) some other one (name him)

12. Which character did you dislike most?
   - a) disliked them all equally
   - b) didn't dislike any of them
   - c) the murderer
   - d) the victim
   - e) some other one (name him)

## Part II

13. In a collection of short stories, under which heading would you expect this one?
   - a) The Funny Side
   - b) Outdoors Calling
   - c) Chills and Thrills
   - d) Neighbors around the World

14. In this story great importance is attached to the sense of
   - a) taste
   - b) sight
   - c) hearing
   - d) touch

15. What was the murderer's name?
   - a) Carl
   - b) Henry
   - c) Edgar
   - d) not mentioned in the story

GO ON TO NEXT PAGE

16. He is most likely telling his story to
a) his children
b) a neighbor
c) the policemen who arrested him
d) the doctor in an insane asylum

17. What was peculiar about the victim's appearance?
a) his nose
b) his eye
c) his mouth
d) his ear

18. In age, the murderer was
a) younger than the victim
b) older than the victim
c) about the same age as the victim
d) can't tell from the story

19. What did the murderer carry when he entered the victim's room during the night?
a) a knife
b) a rope
c) a blanket
d) a lantern

20. Why did he do the deed?
a) He wanted the victim's gold.
b) He had been hired to do it.
c) He wanted revenge.
d) none of these

21. At what time during the night was the crime committed?
a) before midnight
b) at midnight
c) between 1 and 2 o'clock
d) after 4 o'clock

22. The murderer killed the victim by
a) stabbing
b) poisoning
c) smothering
d) shooting

23. He got rid of the body by
a) putting it under the floor boards
b) burying it
c) hiding it under the bed
d) none of these

24. Why did the police come?
a) Someone saw the crime and reported it.
b) The victim was missed at a party he was supposed to attend
c) Someone heard a shriek
d) They came for a social visit.

25. When the police came in, the murderer at first felt
a) afraid
b) angry
c) sad
d) sure of himself

26. When did the murderer first hear the sound of the beating heart?
a) just before he committed the murder
b) when the victim lay dead on the floor
c) when the police came
d) when he first thought of doing the deed

27. The sound the murderer heard was like the sound of
a) water dripping from a faucet
b) deathwatches in a wall
c) a steam engine
d) a watch enveloped in cotton

28. How did the sound of the beating heart affect the murderer?
a) It made him laugh.
b) He could not endure it.
c) He paid no attention to it.
d) It made him feel calm and sure of himself.

29. Did the murderer think the policemen could hear the beating of the heart?
a) yes
b) no
c) can't tell from the story

30. Did the police really hear the beating of the heart?
a) yes
b) no
c) can't tell from the story

31. The murderer tried to cover up the sound by
a) walking up and down with heavy steps
b) scraping a chair on the floor
c) talking loudly
d) all of these

32. Immediately after confessing his crime to the policemen, the murderer probably felt
a) sorry
b) relieved
c) angry
d) afraid

GO ON TO NEXT PAGE

33. What prevented this from being the "perfect crime"?

a) The murderer failed to destroy all the evidence.
b) The victim had suspected he would be murdered and told the police.
c) The police were too smart for the murderer.
d) The workings of the murderer's own conscience gave him away.

34. The murderer says he is telling the story in order to

a) relieve his mind
b) prove he is sane
c) defend himself
d) all of these

35. His mental condition can best be described as

a) insane at the time of the crime but now sane
b) normal at the time of the crime but now insane
c) insane at the time of the crime and still insane
c) normal at the time of the crime and still normal

36. Where did the story take place?

a) in a city
b) in a small country village
c) on a farm
d) in an army camp

37. Who wrote the "Tell-Tale Heart"?

a) Poe
b) Twain
c) Daudet
e) O.Henry

38. Judging by this one story only, which of the following fits the author best?

a) His masterly use of the surprise ending has been widely imitated.
b) This author believed that everything in a short story must aid in producing upon the reader one definite impression, moving him to the feeling of sadness, joy, horror, or any other single emotion.
c) He had a friendly understanding of the problems of the ordinary, "little people" of the big city.
d) He uses his light, humorous touch to gently make fun of human weaknesses.

39. The author builds up suspense by

a) not revealing the victim's name
b) not letting the reader know who the murderer is until the very end
c) having the murderer go into the victim's room seven nights before he finally does the deed
d) keeping the reader guessing as to the murderer's mental state

40. As presented in this story, how is a madman different from a normal person?

a) He laughs at things a normal person does not find funny.
b) His senses are keener, more acute.
c) He is greatly disturbed by something that would not disturb a normal person very much.
d) all of these

(In items 41-45 pick out the best meaning for the underlined word in each sentence. All the sentences were taken from the story.)

41. The heart beat on with a muffled sound.

a) dull
b) quick
c) loud
d) regular

42. Meantime the hellish tattoo of the heart continued.

a) irregular shape
b) wailing sound
c) design made on the skin
d) series of beats, taps

43. "Villains!" I shrieked, "dissemble no more! I admit the deed!"

a) make believe
b) act together
c) take things apart
d) be suspicious

44. I rose and argued about trifles, in a high key and with violent gesticulations.

a) shouts
b) laughter
c) rolling of the eyes
d) movement of the arms

45. So I opened it - you cannot imagine how stealthily.

a) quickly
b) forcefully
c) secretly
d) gently

WHEN YOU HAVE FINISHED THE TEST, TURN YOUR ANSWER SHEET FACE DOWN.

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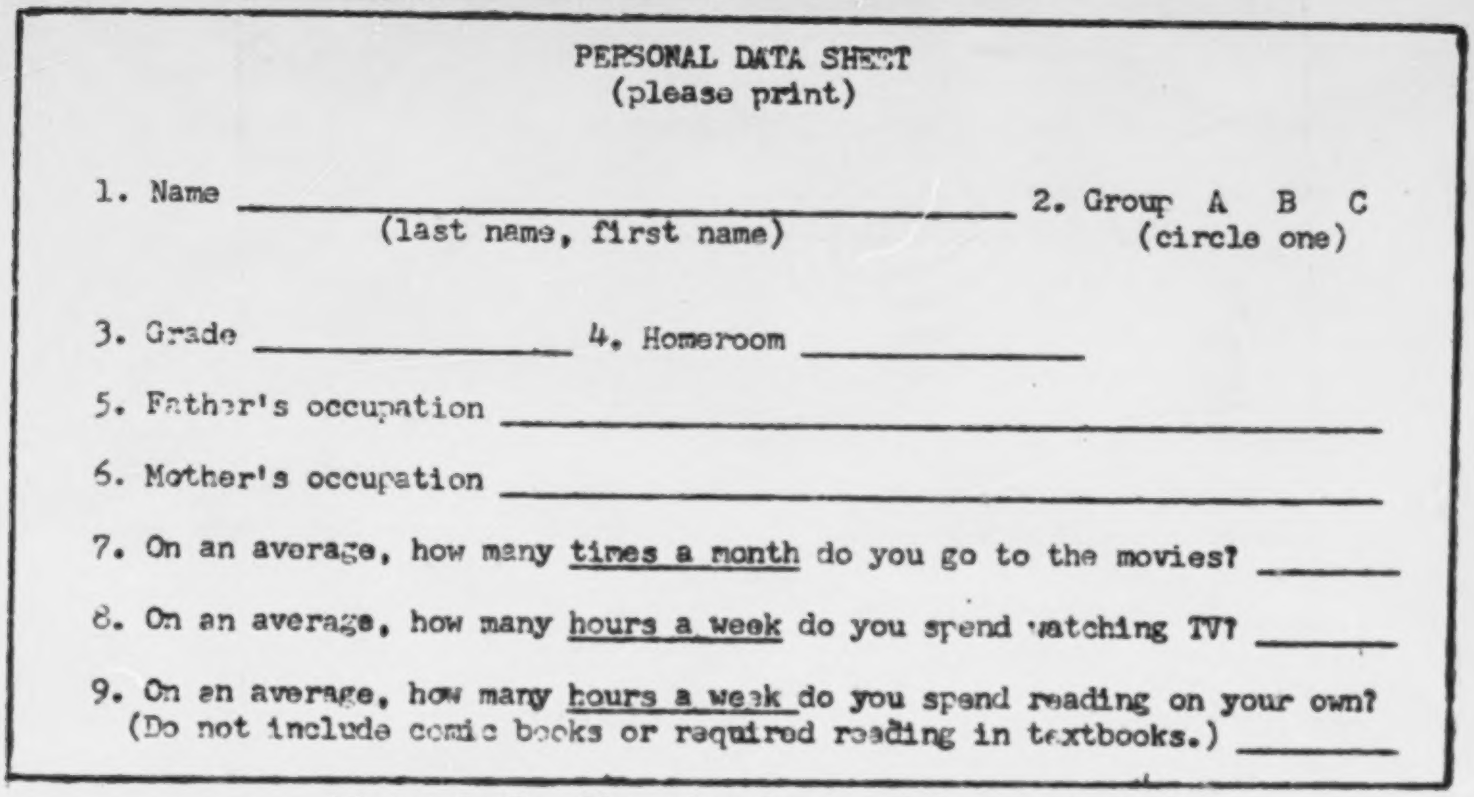
## Appendix B: Forms for Collecting and Recording Data



PERSONAL DATA SHEET
(please print)

1. Name ______________________________ (last name, first name) 2. Group A B C (circle one)

3. Grade ____________ 4. Homeroom ____________

5. Father's occupation ______________________

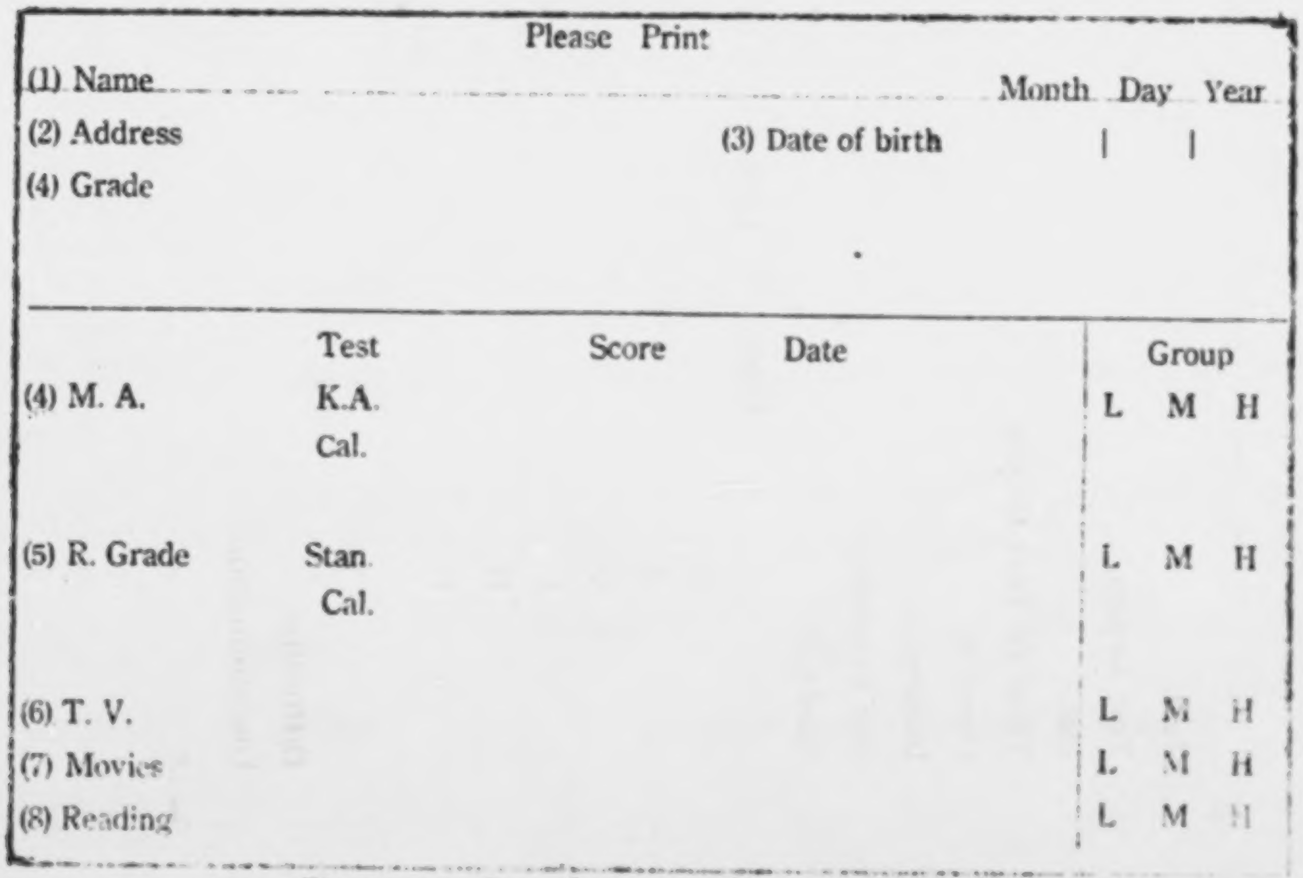
6. Mother's occupation ______________________

7. On an average, how many times a month do you go to the movies? ______

8. On an average, how many hours a week do you spend watching TV? ______

9. On an average, how many hours a week do you spend reading on your own? (Do not include comic books or required reading in textbooks.) ______

Figure 3: Questionnaire for acquiring personal data



Please Print

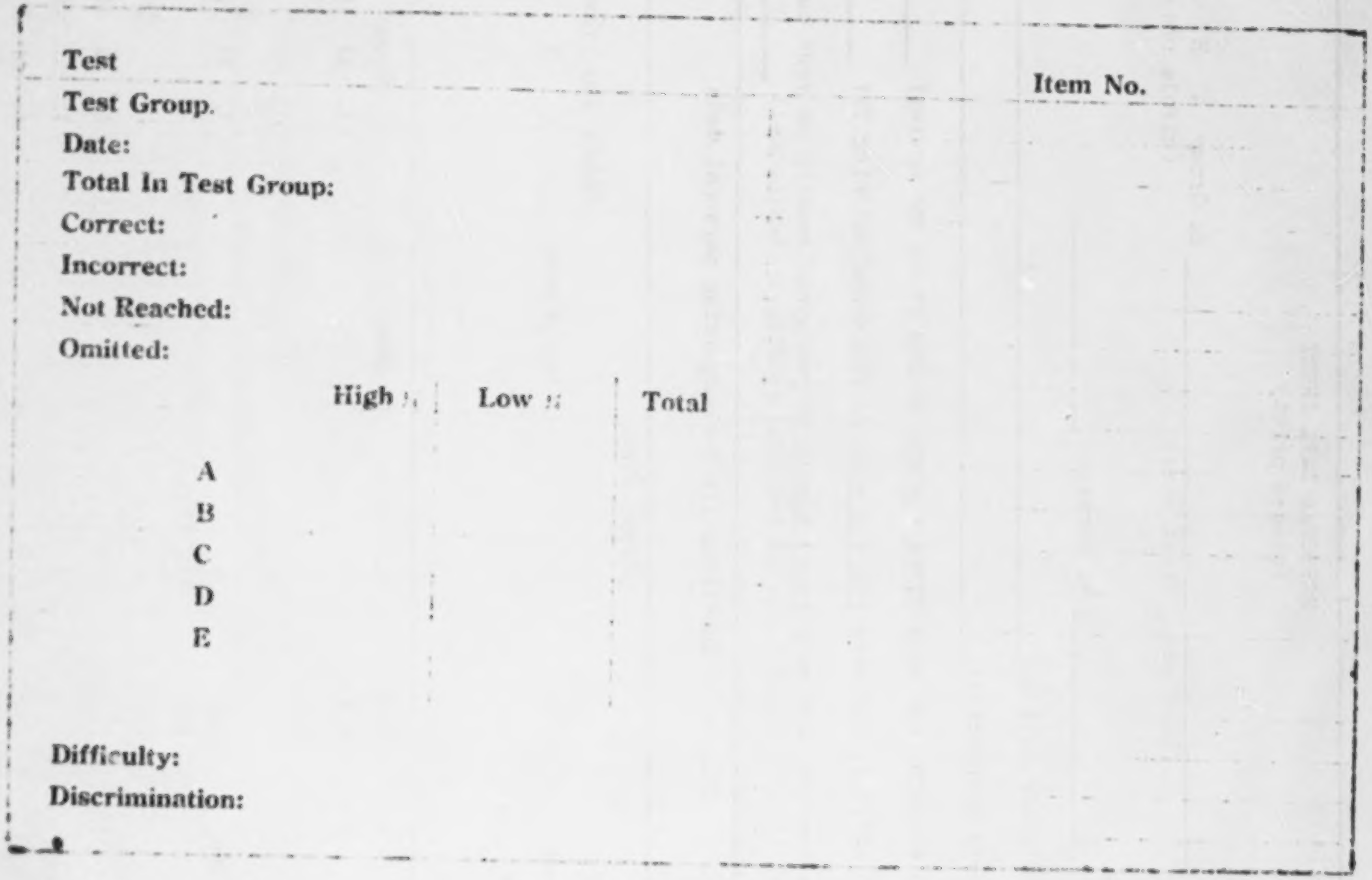
(1) Name ______________________ Month Day Year

(2) Address (3) Date of birth | |

(4) Grade

| | Test | Score | Date | Group |
|---|---|---|---|---|
| (4) M. A. | K.A.<br>Cal. | | | L M H |
| (5) R. Grade | Stan.<br>Cal. | | | L M H |
| (6) T. V. | | | | L M H |
| (7) Movies | | | | L M H |
| (8) Reading | | | | L M H |

Figure 4: Form for recording personal data



**Test**

**Item No.**

**Test Group.**

**Date:**

**Total In Test Group:**

**Correct:**

**Incorrect:**

**Not Reached:**

**Omitted:**

| | High % | Low % | Total |
|---|---|---|---|
| A | | | |
| B | | | |
| C | | | |
| D | | | |
| E | | | |

**Difficulty:**

**Discrimination:**

Figure 5: Form for item analyses of try-out versions of tests

## Appendix C: Directions for Students and Administrators

Directions for Administrators - Group A

Directions for Administrators - Group B

Directions for Administrators - Group C

Directions to Students in Group A

Directions to Students in Groups B and C

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## Directions for Administrators - Group A

1. Check that pupils are in the proper group. Send strays to Mr. Levinson in the auditorium.

2. Explain the purpose of the experiment and the general procuedure. Say:

> You are taking part in an experiment to find out how well junior high students read and appreciate short stories. You will read four stories and take tests on them. Your test papers will be marked by Mr. Levinson. Your regular teachers will not see them nor will the results have any direct connection with your marks in English.

3. Have the tops of the desks cleared and insure that each student has a pen or pencil.

4. Distribute answer sheets and have pupils fill in the spaces at the top. Emphasize the importance of PRINTING LAST NAME FIRST.

5. Say:

> Put your answer sheets aside. I am now going to give you a sheet of directions, which I shall read aloud while you follow silently. After I have finished reading all the directions, I shall answer any questions you may have about them.

Distribute directions, read aloud, answer questions.

6. Distribute copies of the story. Students begin reading immediately.

7. WHEN EVERYONE HAS FINISHED READING, collect the stories and point out the following acceptable test-taking techniques:

    a. Make "educated guesses", but do not guess wildly without any basis for choice.

    b. Do no linger over "hard" items. Skip them and return to them later.

    c. Examine all answers given for a particular item before making a choice.

8. Distribute the test booklets. Students begin working immediately. See that they are marking their answer sheets properly.

9. WHEN EVERYONE HAS FINISHED THE TEST, collect the answer sheets, then the test booklets and the directions sheets.

10. Put all materials - copies of the story, answer sheets, directions, and test booklets - back into the envelope in which you received them.

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## Directions for Administrators - Group B

1. Check that pupils are in the proper group. Send strays to Mr. Levinson in the auditorium.

2. Explain the purpose of the experiment and the general procedure. Say:

> You are taking part in an experiment to find out how motion pictures effect the ability of junior high students to read and appreciate short stories. Some of you will only read the stories before taking tests on them. Others will see motion picture versions of the stories as well as read them before taking the tests. There will be four stories all together, one a week.
>
> This group, Group B, will read the stories here. Then you will go to the auditorium where you will see the films and take the tests.
>
> The test papers will be marked by Mr. Levinson. Your teachers will not see them nor will the results have any direct connection with your marks in English or any other subject.

3. Have the tops of the desks cleared and insure that each student has a pen or pencil.

4. Distribute answer sheets and have pupils fill in the spaces at the top. Emphasize the importance of PRINTING LAST NAME FIRST.

5. Say:

> Put your answer sheets aside. I am now going to give you a sheet of directions, which I shall read aloud while you follow silently. After I have finished reading all the directions, I shall answer any questions you may have about them.

Distribute directions, read aloud, answer questions.

6. Distribute copies of the story. Students begin reading immediately.

7. When everyone has finished reading, collect the stories and directions sheets.

8. At prearranged signal, line up class and have them go to the auditorim, via the S. 17th Street stairway. THEY ARE TO TAKE THEIR ANSWER SHEETS WITH THEM. CAUTION THEM AGAINST DISCUSSING THE STORY WITH THEIR CLASSMATES AS THEY PROCEED TO THE AUDITORIUM.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

(following steps in auditorium)

9. Show film.

10. Point out acceptable test-taking techniques and remind students that TEST IS BASED ON THE STORY THEY READ NOT, THE FILM VERSION.

11. Distribute the test booklets. Students beging working immediately. See that they are marking their answer sheets properly.

12. When everyone has finished the test, collect the answer sheets first, then the test booklets.

13. Put all materials - answer sheets and test booklets - into envelopes in which you received them.

************

## Directions for Administrators -Group C

1. Check that students are in the proper group. Send strays to Mr. Levinson. Have pupils put their books on the floor.

2. Explain the purpose of the experiment and the general procedure. Say:

> You are taking part in an experiment to find out how motion pictures affect the ability of junior high students to read and appreciate short stories. Some of you will only read the stories before taking tests on them. Others will see motion picture versions of the stories as well as read them before taking the tests. There will be four stories all together, one a week.
>
> This group, Group C, will first see the films here. Then you will go to the rooms to which you have been assigned to read the stories and to take the tests.
>
> The test papers will be marked by Mr. Levinson. Your teachers will not see them nor will the results have any direct connection with your marks in English or any other subject.

3. Have each pupil take a book on which to rest his paper and insure that he has a pen or pencil.

4. Distribute answer sheets and have pupils fill in the spaces at the top. Emphasize the importance of PRINTING LAST NAME FIRST.

5. Say:

> Put your answer sheets aside. I am now going to give you a sheet of directions, which I shall read aloud while you follow silently. After I have finished reading all the directions, I shall answer any questions you may have about them.

Distribute directions, read aloud, and answer questions. Collect directions sheets after all questions have been answered.

6. Show film.

7. At prearranged signal, line up class and have them go to their assigned rooms via the Madison Avenue stairway. THEY ARE TO TAKE THEIR ANSWER SHEETS WITH THEM. CAUTION THEM AGAINST DISCUSSING THE FILM WITH THEIR CLASSMATES AS THEY PROCEED TO THEIR ROOMS.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

(following steps in rooms)

8. Distribute copies of story. Students begin reading immediately.

9. When everyone has finished reading, collect the stories and point out the following acceptable test-taking techniques:

a. Make "educated guesses", but do not guess wildly without any basis for your choice.

b. Do not linger over "hard" items. Skip them and return to them later.

c. Examine all answers given for a particular item before making a choice.

REMIND STUDENTS THAT TEST IS BASED ON THE STORY THEY READ, NOT THE FILM VERSION.

10. Distribute the test booklets. Students beging working immediately. See that they are marking their answer sheets properly.

11. WHEN EVERYONE HAS FINISHED THE TEST, collect the answer sheets, then the test booklets.

12. Put all materials - copies of the story, answer sheets, and test booklets - into the envelope in which you received them.

************

# DIRECTIONS TO STUDENTS IN GROUP A

When you get your copy of a story, begin reading immediately. Read at your normal speed. Most of you will finish in fifteen minutes or less. You may go back and reread any parts that are not clear to you. However, you may not ask your teacher for help. If you finish reading before others in the class, wait quietly until everyone has finished.

When you get your copy of a test booklet, begin working immediately. MARK ALL YOUR ANSWERS ON THE ANSWER SHEET. DO NOT WRITE IN THE TEST BOOKLET.

Several possible answers are given for each item in the test. Show your choice by putting an X over its letter on the answer sheet. The following is an example of how this should be done:

(Example of test item)

1. Our principal's last name is
   a) Wilson
   b) Raimondi
   c) Sozio
   d) none of these

(Example of answer)

1. a b X d

You may change an answer by erasing or scratching out the original X and marking another letter.

There is no time limit for the test, but work as rapidly as you can. Most of you will finish in less than fifteen minutes. Do your best but make sure your answers are your own. If you copy answers or discuss the story with anyone before taking the test, you will make the experiment unscientific.

In Part I of the test there are no "right" or "wrong" answers. Any answer is "right" so long as it is truthful. In Part II you are to choose the best answer in each case. No one is expected to get all the answers right.

When you have finished the test, turn your answer sheet face down on the desk. If others are still working, you may quietly do some other school work while waiting for them to finish.

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## DIRECTIONS TO STUDENTS IN GROUPS B AND C

The tests you will take as part of this experiment are based on the stories you read, not the motion picture versions. There may be differences between what you read in the printed story and what you see and hear in the film. IN ALL CASES WHERE THERE ARE DIFFERENCES, CHOOSE YOUR ANSWER ON THE BASIS OF WHAT YOU READ IN THE PRINTED STORY.

When you get your copy of a story, begin reading immediately. Read at your normal speed. Most of you will finish in fifteen minutes or less. You may go back and reread any parts that are not clear to you. However, you may not ask your teacher for help. If you finish reading before others in the class, wait quietly until everyone has finished.

When you get your copy of a test booklet, begin working immediately. MARK ALL YOUR ANSWERS ON THE ANSWER SHEET. DO NOT WRITE IN THE TEST BOOKLET.

Several possible answers are given for each item in the test. Show your choice by putting an X over its letter on the answer sheet. The following is an example of how this should be done:

(Example of test item)

1. Our principal's last name is
    a) Wilson
    b) Raimondi
    c) Sozio
    d) none of these

(Example of answer)

1. a b X d

You may change an answer by erasing or scratching out the original X and marking another letter.

There is no time limit for the test, but work as rapidly as you can. Most of you will finish in less than fifteen minutes. Do your best but make sure that your answers are your own. If you copy answers or discuss the story with anyone before taking the test, you will make the experiment unscientific.

In Part I of the test there are no "right" or "wrong" answers. Any answer is right so long as it is truthful. In Part II you are to choose the best answer in each case. No one is expected to get all the answers right.

When you have finished the test, turn your answer sheet face down on the desk. If others are still working, you may quietly do some other school work while waiting for them to finish.

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## Appendix D: Summaries of Individual Analyses of Variance

Problem 1: Total Scores, All Stories

Problem 2: Total Score, "The Last Lesson" only

Problem 3: Total Score, "The Last Leaf" only

Problem 4: Total Score, "The Tell-Tale Heart" only

Problem 5: Total Score, "The Copy and the Anthem" only

Problem 6: All Stories, Enjoyment Aspect only

Problem 7: All Stories, Identification Aspect only

Problem 8: All Stories, Comprehension Aspect only

Problem 9: All Stories, Vocabulary only

Problem 10: Total Scores, All Stories, Reading Level Used Instead of I.Q. as a Variable.

The following code is used in the tables to indicate the various factors:

Factor A - Method of exposure to stories

Factor B - I.Q. (reading level in Problem 10)

Factor C - Age

Factor D - Sex

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## TABLE XXII

## AOV PROBLEM 1: TOTAL SCORES, ALL STORIES

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 35015.0 | 216.1 | .00 | 1 | |
| ABCD | 8 | 1974.6 | 246.8 | 1.14 | 1 | |
| ABC | 8 | 1815.7 | 227.0 | 1.05 | 1 | |
| ABD | 4 | 1671.1 | 417.8 | 1.93 | 1 | |
| ACD | 4 | 245.4 | 61.4 | .28 | 1 | |
| BCD | 4 | 771.0 | 192.8 | .89 | 1 | |
| AB | 4 | 1324.6 | 331.2 | 1.53 | 1 | |
| AC | 4 | 762.6 | 190.7 | .88 | 1 | |
| AD | 2 | 613.6 | 306.8 | 1.42 | 1 | |
| BC | 4 | 2376.4 | 594.1 | 2.75 | 1 | **significant** |
| BD | 2 | 588.5 | 294.3 | 1.36 | 1 | |
| CD | 2 | 333.5 | 166.8 | .77 | 1 | |
| A | 2 | 2501.2 | 1250.6 | 5.79 | 1 | **significant** |
| B | 2 | 19937.9 | 9969.0 | 46.13 | 1 | **significant** |
| C | 2 | 8130.5 | 4065.3 | 18.81 | 1 | **significant** |
| D | 1 | 1093.5 | 1093.5 | 5.06 | 1 | **significant** |
| TOTAL | 215 | 79155.1 | .0 | .00 | 1 | |

## TABLE XXIII

## AOV PROBLEM 2: "THE LAST LESSON" ONLY

| SOURCE | DFG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 3298.0 | 20.4 | .00 | 2 | |
| ABCD | 8 | 134.0 | 16.8 | .82 | 2 | |
| ABC | 8 | 131.5 | 16.4 | .80 | 2 | |
| ABD | 4 | 162.6 | 40.7 | 2.00 | 2 | |
| ACD | 4 | 10.7 | 2.7 | .13 | 2 | |
| BCD | 4 | 178.0 | 44.5 | 2.18 | 2 | |
| AB | 4 | 146.2 | 36.6 | 1.79 | 2 | |
| AC | 4 | 11.0 | 2.8 | .14 | 2 | |
| AD | 2 | 38.1 | 19.1 | .94 | 2 | |
| BC | 4 | 169.2 | 42.3 | 2.07 | 2 | |
| BD | 2 | 6.1 | 3.1 | .15 | 2 | |
| CD | 2 | 49.4 | 24.7 | 1.21 | 2 | |
| A | 2 | 122.1 | 61.1 | 3.00 | 2 | |
| B | 2 | 1525.7 | 762.9 | 37.40 | 2 | **significant** |
| C | 2 | 763.4 | 381.7 | 18.71 | 2 | **significant** |
| D | 1 | 93.3 | 93.3 | 4.57 | 2 | **significant** |
| TOTAL | 215 | 6839.3 | .0 | .00 | 2 | |

## TABLE XXIV

### AOV PROBLEM 3: "THE LAST LEAF" ONLY

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 3421.5 | 21.1 | .00 | 3 | |
| ABCD | 8 | 244.0 | 30.5 | 1.45 | 3 | |
| ABC | 8 | 290.2 | 36.3 | 1.72 | 3 | |
| ABD | 4 | 174.0 | 43.5 | 2.06 | 3 | |
| ACD | 4 | 10.7 | 2.7 | .13 | 3 | |
| BCD | 4 | 140.9 | 35.2 | 1.67 | 3 | |
| AB | 4 | 20.3 | 5.1 | .24 | 3 | |
| AC | 4 | 44.4 | 11.1 | .53 | 3 | |
| AD | 2 | 57.1 | 28.6 | 1.36 | 3 | |
| BC | 4 | 208.2 | 52.1 | 2.47 | 3 | **significant** |
| BD | 2 | 37.5 | 18.8 | .89 | 3 | |
| CD | 2 | 27.8 | 13.9 | .66 | 3 | |
| A | 2 | 466.0 | 233.0 | 11.04 | 3 | **significant** |
| B | 2 | 1781.6 | 890.8 | 42.22 | 3 | **significant** |
| C | 2 | 479.1 | 239.6 | 11.36 | 3 | **significant** |
| D | 1 | 378.7 | 378.7 | 17.95 | 3 | **significant** |
| TOTAL | 215 | 7782.0 | .0 | .00 | 3 | |

## TABLE XXV

### AOV PROBLEM 4: "THE TELL-TALE HEART" ONLY

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 3084.7 | 19.0 | .00 | 4 | |
| ABCD | 8 | 63.4 | 7.9 | .42 | 4 | |
| ABC | 8 | 110.1 | 13.8 | .73 | 4 | |
| ABD | 4 | 107.6 | 26.9 | 1.42 | 4 | |
| ACD | 4 | 53.5 | 13.4 | .71 | 4 | |
| BCD | 4 | 23.9 | 6.0 | .32 | 4 | |
| AB | 4 | 185.7 | 46.4 | 2.44 | 4 | significant |
| AC | 4 | 78.9 | 19.7 | 1.04 | 4 | |
| AD | 2 | 23.9 | 12.0 | .63 | 4 | |
| BC | 4 | 80.2 | 20.1 | 1.06 | 4 | |
| BD | 2 | 16.6 | 8.3 | .44 | 4 | |
| CD | 2 | 32.3 | 16.2 | .85 | 4 | |
| A | 2 | 52.6 | 26.3 | 1.38 | 4 | |
| B | 2 | 865.5 | 432.8 | 22.78 | 4 | significant |
| C | 2 | 322.7 | 161.4 | 8.49 | 4 | significant |
| D | 1 | 57.0 | 57.0 | 3.00 | 4 | |
| TOTAL | 215 | 5158.6 | .0 | .00 | 4 | |

## TABLE XXVI

### AOV PROBLEM 5: "THE COP AND THE ANTHEM" ONLY

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 3217.7 | 19.9 | .00 | 5 | |
| ABCD | 8 | 241.0 | 30.1 | 1.51 | 5 | |
| ABC | 8 | 75.0 | 9.4 | .47 | 5 | |
| ABD | 4 | 84.7 | 21.2 | 1.07 | 5 | |
| ACD | 4 | 18.8 | 4.7 | .24 | 5 | |
| BCD | 4 | 94.3 | 23.6 | 1.19 | 5 | |
| AB | 4 | 96.9 | 24.2 | 1.22 | 5 | |
| AC | 4 | 75.4 | 18.9 | .95 | 5 | |
| AD | 2 | 68.1 | 34.1 | 1.71 | 5 | |
| BC | 4 | 164.8 | 41.2 | 2.07 | 5 | |
| BD | 2 | 158.8 | 79.4 | 3.99 | 5 | significant |
| CD | 2 | 20.9 | 10.5 | .53 | 5 | |
| A | 2 | 254.3 | 127.2 | 6.39 | 5 | significant |
| B | 2 | 993.7 | 496.9 | 24.97 | 5 | significant |
| C | 2 | 475.3 | 237.7 | 11.94 | 5 | significant |
| D | 1 | 11.1 | 11.1 | .56 | 5 | |
| TOTAL | 215 | 6050.8 | .0 | .00 | 5 | |

## TABLE XXVII

### AOV PROBLEM 6: ALL STORIES, ENJOYMENT ASPECT ONLY

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 14054.0 | 86.8 | .00 | 6 | |
| ABCD | 8 | 192.7 | 24.1 | .28 | 6 | |
| ABC | 8 | 548.0 | 68.5 | .79 | 6 | |
| ABD | 4 | 164.0 | 41.0 | .47 | 6 | |
| ACD | 4 | 394.5 | 98.6 | 1.14 | 6 | |
| BCD | 4 | 439.1 | 109.8 | 1.26 | 6 | |
| AB | 4 | 226.1 | 56.5 | .65 | 6 | |
| AC | 4 | 325.2 | 81.3 | .94 | 6 | |
| AD | 2 | 50.3 | 25.2 | .29 | 6 | |
| BC | 4 | 42.7 | 10.7 | .12 | 6 | |
| BD | 2 | 221.7 | 110.9 | 1.28 | 6 | |
| CD | 2 | 132.6 | 66.3 | .76 | 6 | |
| A | 2 | 778.7 | 389.4 | 4.49 | 6 | **SIGNIFICANT** |
| B | 2 | 281.0 | 140.5 | 1.62 | 6 | |
| C | 2 | 212.9 | 106.5 | 1.23 | 6 | |
| D | 1 | 929.1 | 929.1 | 10.70 | 6 | **SIGNIFICANT** |
| TOTAL | 215 | 18992.6 | .0 | .00 | 6 | |

## TABLE XXVIII

### AOV PROBLEM 7: ALL STORIES, IDENTIFICATION ASPECT ONLY

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 740.2 | 4.6 | .00 | 7 | |
| ABCD | 8 | 10.7 | 1.3 | .28 | 7 | |
| ABC | 8 | 10.8 | 1.3 | .28 | 7 | |
| ABD | 4 | 13.3 | 3.3 | .72 | 7 | |
| ACD | 4 | 1.7 | .4 | .09 | 7 | |
| BCD | 4 | 11.2 | 2.8 | .61 | 7 | |
| AB | 4 | 56.3 | 14.1 | 3.07 | 7 | **significant** |
| AC | 4 | 6.2 | 1.6 | .35 | 7 | |
| AD | 2 | 39.0 | 19.5 | 4.24 | 7 | **significant** |
| BC | 4 | 4.7 | 1.2 | .26 | 7 | |
| BD | 2 | 21.1 | 10.6 | 2.30 | 7 | |
| CD | 2 | 6.1 | 3.1 | .67 | 7 | |
| A | 2 | .2 | .1 | .02 | 7 | |
| B | 2 | 2.9 | 1.5 | .33 | 7 | |
| C | 2 | 3.1 | 1.6 | .34 | 7 | |
| D | 1 | 7.0 | 7.0 | 1.52 | 7 | |
| TOTAL | 215 | 934.0 | .0 | .00 | 7 | |

## TABLE XXII

### AOV PROBLEM 8: ALL STORIES, COMPREHENSION ASPECT ONLY

| SOURCE | DFG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 21612.7 | 133.4 | .00 | 8 | |
| ABCD | 8 | 1388.8 | 173.6 | 1.30 | 8 | |
| ABC | 8 | 1296.0 | 162.0 | 1.21 | 8 | |
| ABD | 4 | 1388.8 | 347.2 | 2.60 | 8 | **significant** |
| ACD | 4 | 234.3 | 58.6 | .44 | 8 | |
| BCD | 4 | 545.9 | 136.5 | 1.02 | 8 | |
| AB | 4 | 1194.7 | 298.7 | 2.24 | 8 | |
| AC | 4 | 355.6 | 88.9 | .67 | 8 | |
| AD | 2 | 1004.0 | 502.0 | 3.76 | 8 | **significant** |
| BC | 4 | 1695.3 | 423.8 | 3.18 | 8 | **significant** |
| BD | 2 | 497.1 | 248.6 | 1.86 | 8 | |
| CD | 2 | 346.8 | 173.4 | 1.30 | 8 | |
| A | 2 | 1412.5 | 706.3 | 5.29 | 8 | **significant** |
| B | 2 | 13276.9 | 6638.5 | 49.76 | 8 | **significant** |
| C | 2 | 4498.7 | 2249.4 | 16.86 | 8 | **significant** |
| D | 1 | 489.0 | 489.0 | 3.67 | 8 | |
| TOTAL | 215 | 51237.1 | .0 | .00 | 8 | |

## TABLE XXX

### AOV PROBLEM 9: ALL STORIES, VOCABULARY ONLY

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 1521.2 | 9.4 | .00 | 9 | |
| ABCD | 8 | 116.0 | 14.5 | 1.54 | 9 | |
| ABC | 8 | 100.5 | 12.6 | 1.34 | 9 | |
| ABD | 4 | 4.0 | 1.0 | .11 | 9 | |
| ACD | 4 | 48.1 | 12.0 | 1.28 | 9 | |
| BCD | 4 | 33.5 | 8.4 | .89 | 9 | |
| AB | 4 | 69.1 | 17.3 | 1.84 | 9 | |
| AC | 4 | 35.3 | 8.8 | .94 | 9 | |
| AD | 2 | 2.6 | 1.3 | .14 | 9 | |
| BC | 4 | 86.1 | 21.5 | 2.29 | 9 | |
| BD | 2 | 8.9 | 4.5 | .48 | 9 | |
| CD | 2 | .7 | .4 | .04 | 9 | |
| A | 2 | 36.3 | 18.2 | 1.94 | 9 | |
| B | 2 | 1003.4 | 501.7 | 53.37 | 9 | **significant** |
| C | 2 | 607.2 | 303.6 | 32.30 | 9 | **significant** |
| D | 1 | 2.9 | 2.9 | .31 | 9 | |
| TOTAL | 215 | 3675.8 | .0 | .00 | 9 | |

## TABLE XXXI

### AOV PROBLEM 10: TOTAL SCORES, ALL STORIES
### (READING LEVEL USED INSTEAD OF I.Q.)

| SOURCE | DEG FR | SUM SQS | MEAN SQS | F RATIO | PROBLEM | |
|---|---|---|---|---|---|---|
| ERROR | 162 | 25514.0 | 157.5 | .00 | 10 | |
| ABCD | 8 | 1839.6 | 230.0 | 1.46 | 10 | |
| ABC | 8 | 1725.5 | 215.7 | 1.37 | 10 | |
| ABD | 4 | 788.0 | 197.0 | 1.25 | 10 | |
| ACD | 4 | 309.8 | 77.5 | .49 | 10 | |
| BCD | 4 | 994.4 | 248.6 | 1.58 | 10 | |
| AB | 4 | 620.7 | 155.2 | .99 | 10 | |
| AC | 4 | 1420.4 | 355.1 | 2.25 | 10 | |
| AD | 2 | 459.1 | 229.6 | 1.46 | 10 | |
| BC | 4 | 820.5 | 205.1 | 1.30 | 10 | |
| BD | 2 | 267.8 | 133.9 | .85 | 10 | |
| CD | 2 | 407.0 | 203.5 | 1.29 | 10 | |
| A | 2 | 1948.6 | 974.3 | 6.19 | 10 | **significant** |
| B | 2 | 31427.8 | 15713.9 | 99.77 | 10 | **significant** |
| C | 2 | 8240.0 | 4120.0 | 26.16 | 10 | **significant** |
| D | 1 | 2294.5 | 2294.5 | 14.57 | 10 | **significant** |
| TOTAL | 215 | 79077.7 | .0 | .00 | 10 | |